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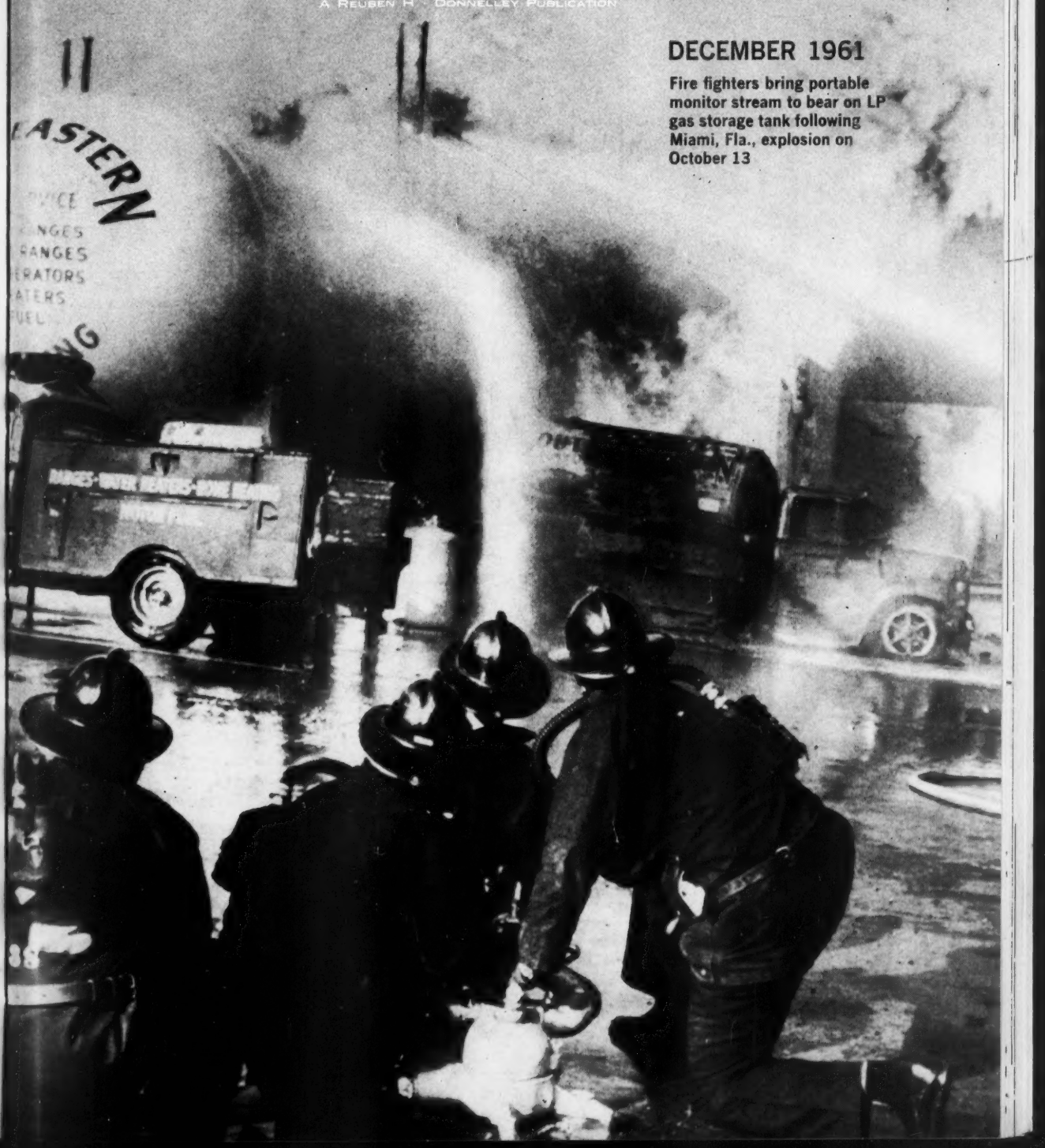
FIRE ENGINEERING

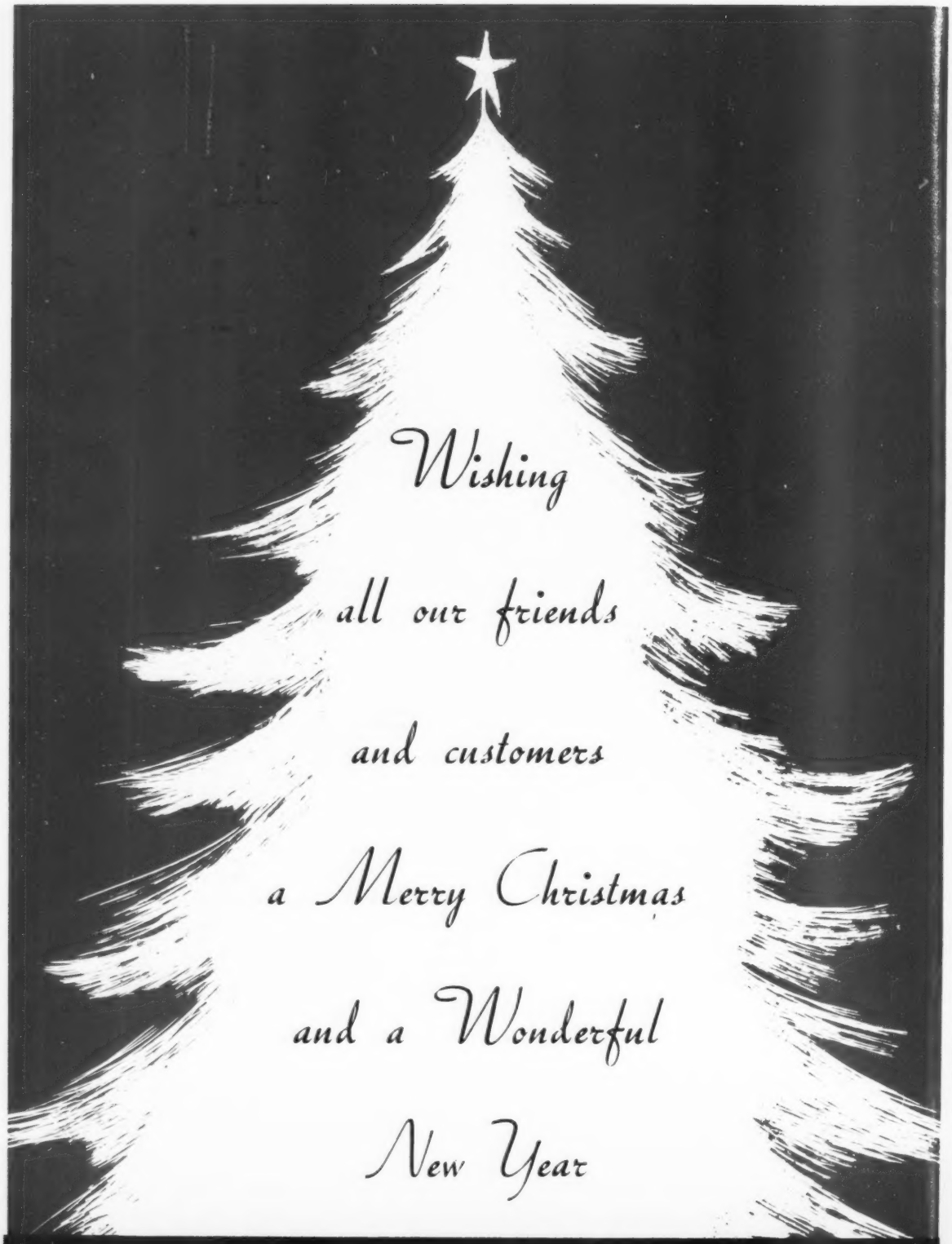
The Journal of the Fire Protection Profession Since 1877

A Reuben H. Donnelley Publication



DECEMBER 1961

Fire fighters bring portable monitor stream to bear on LP gas storage tank following Miami, Fla., explosion on October 13

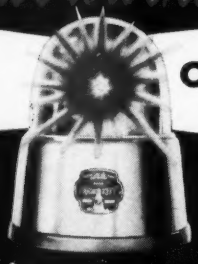


THE FOLKS AT
MAXIM MOTOR COMPANY
MIDDLEBORO, MASSACHUSETTS

REACH OUT---

increase your warning!

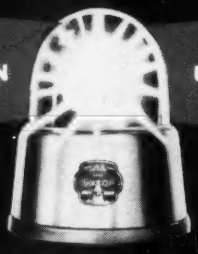
WHITE LIGHT OUTREACHES COLOR!



Add white **for greater safety!**

Quicker recognition grants more time for corrective action!

CATCH AND HOLD ATTENTION



UNTIL *COLOR* IDENTIFIES YOUR FIRE APPARATUS

THE *ALTERNATE FLASH* OF WHITE AND COLOR

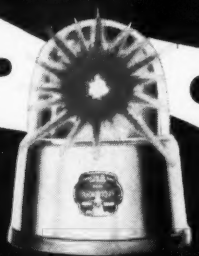
can identify your department and indicate fire equipment in contrast with ordinary emergency vehicles.

distinctive in greater safety with the better FEDERAL

STRAT-O-RAY.

The #175 **has it's white beams *tilted,***

ONE UP



ONE DOWN

for reflective effect.

The #176, **also available in red and white, has *all* beams *horizontal,* for greater impact on the viewer.**

SPECIFY **your color combination and selected model number from the BEACON RAYS described in FEDERAL Bulletin #351, in the Catalog. ASK FOR CATALOG #300 *TODAY!***

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FIRE ENGINEERING

THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

VOL. 114 DECEMBER, 1961 NO. 12

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Season's Greetings

This issue marks another milestone in FIRE ENGINEERING's long history. With it we close out 1961 and at the same time, begin our 85th year of publishing for the fire protection field.

Included in these pages is the annual index which, in addition to providing quick reference to the past 12 issues, also serves as a measuring stick to judge the scope of coverage we have provided. Thus, with an eye on the past, we look forward to a renewed challenge to satisfy our readers in the months ahead in order to continue to merit your support.

Judging from what we have seen of the editorial plans for the coming year, we are confident our efforts will meet with your approval.

At this time, we also extend to our many friends our best wishes for a Merry Christmas.

The Publishers

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FIRE ENGINEERING, December, 1961, published the 1st of each month by the Magazine Publishing Division, the Reuben H. Donnelley Corporation, 466 Lexington Avenue, New York 17, N. Y. Edward B. Wintersteen, Executive Manager; George W. Hutchings, Division Regional Manager — Midwest; John Mileham, Division Controller; Thomas J. Hanly, Business Manager.

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New York 17—William J. Gibson and Joseph F. Cosgrove, Eastern Representatives, 466 Lexington Avenue. ORegon 9-4000.

Chicago 5—Donald C. White, Midwestern Representative, 59 East Van Buren Street, Chicago 5. Telephone: 922-7738.

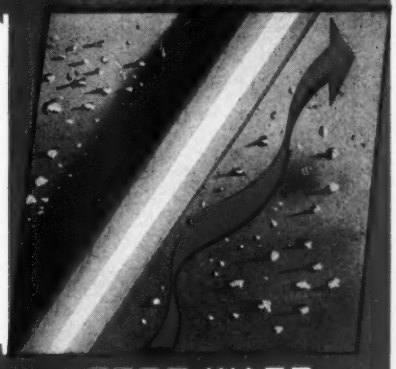
Pasadena 8—John A. Osborne, West Coast Manager, 1126 Del Rey. SYcamore 4-6328.

Subscription Rates: U. S. and Canada $4 a year, $7 for two years; Pan-American and Foreign, $5 a year, $10 for two years; Single Copy 50¢. Publication Office: 109 West Chestnut Street, Lancaster, Pa. Entered as Second Class Matter at Post Office, Lancaster, Pa., under act of March 3, 1879.

MAIL CHANGES OF ADDRESS and subscription orders to Fire Engineering, 466 Lexington Avenue, New York 17, N. Y. Please include your city delivery zone number.

UNISPUN FIRE HOSE

ZERO TURNS



ZERO WARP

ZERO RISE

WRITE US OR CONTACT YOUR AUTHORIZED FABRIC FIRE HOSE REPRESENTATIVE

WITH WEATHERMATE PROTECTION AND PRES-R-LOCK COUPLINGS

FABRIC FIRE HOSE COMPANY ★ SANDY HOOK, CONN.

Exclusive Manufacturers of Fire Hose Since 1869 ★★★★★

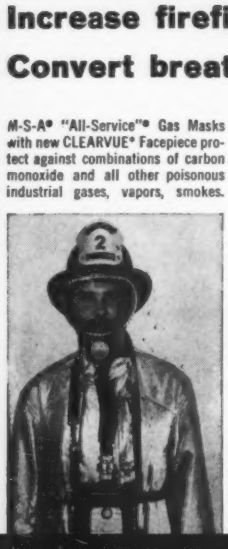
IN CANADA *Pierre Thibault* CANADA, LTD., LTEE., PIERREVILLE, QUEBEC

MSA
SAFETY EQUIPMENT HEADQUARTERS

MSA backs up its label with:
selection—quality—research—experience

Increase firefighters' safety and comfort:
Convert breathing equipment to new M-S-A® CLEARVUE* Facepiece

M-S-A® "All-Service"® Gas Masks with new CLEARVUE® Facepiece protect against combinations of carbon monoxide and all other poisonous industrial gases, vapors, smokes.



Breathing equipment converts easily and inexpensively to the single lens CLEARVUE. It's the *only* facepiece that offers all these features:

- Lens is easily replaceable in the field without special tools.
- Lens fastening device creates uniform tension.
- Prevents loosening, pop-out, and leakage.
- Prescription glasses may be easily mounted and adjusted inside the facepiece.
- Chin stop eliminates improper positioning and wearer discomfort.
- Exhalation valve is well guarded from possible damage, yet readily replaceable.
- Molded lip inside the facepiece provides a comfortable leak-tight fit on wide variety of faces.
- Improved speaking diaphragm permits crisp, clear communication.
- Facepiece design prevents lens from fogging.

Want a demonstration? Call your MSA Representative. Or, write us for new bulletin. Mine Safety Appliances Company, Pittsburgh 8, Pennsylvania. In Canada: Mine Safety Appliances Company of Canada Ltd., Toronto 4, Ontario.

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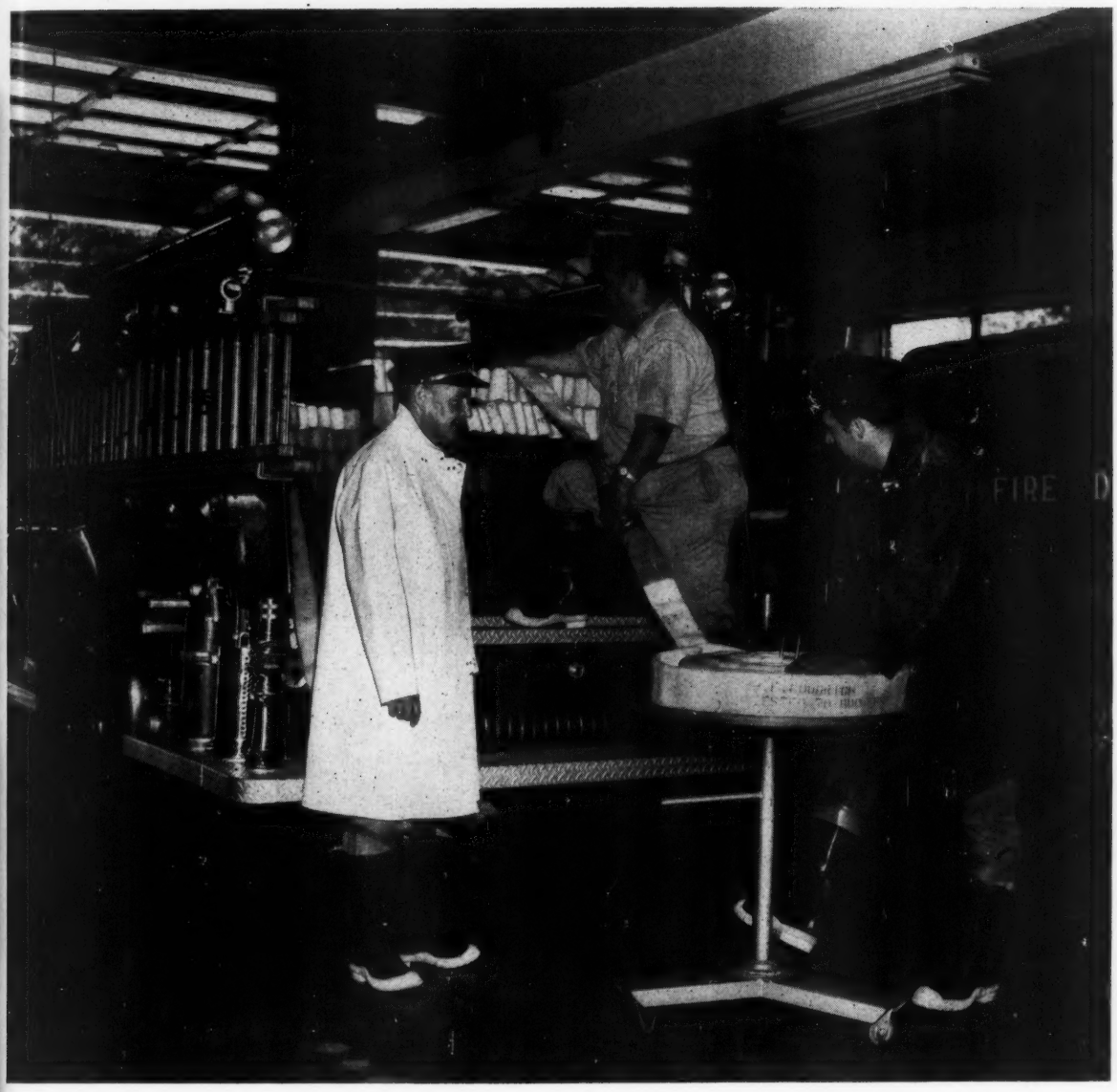


This year our truck can carry twice as much hose

"NO CHANGE in the truck. It's the hose. So flexible it racks in half the space."

The words are from Chief R. Earle DeVor, Fairview Fire Department, Poughkeepsie, N.Y. The hose is from B.F.Goodrich. Its *all-Dacron* jacket makes it light, flexible, easy handling —and a real space-saver.

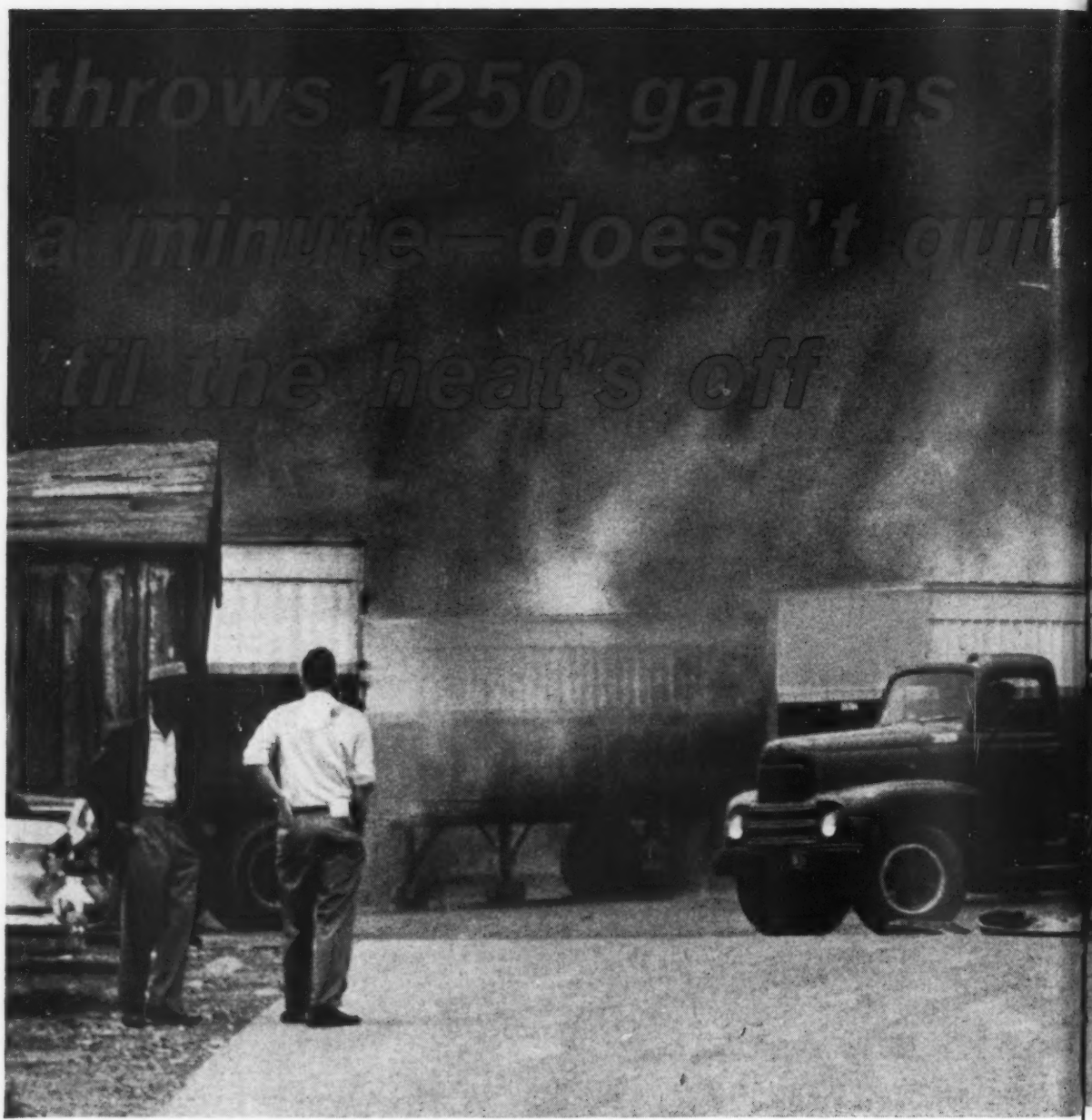
BFG Diamond hose is stronger, too. So strong it will out-wear ordinary hose many times over.

The all-Dacron jacket on Diamond hose absorbs far less water than cotton-jacketed hose. It dries fast, is less likely to freeze in winter weather. Mildew has no effect on it. Oils, greases and most chemicals can't hurt it. Chief DeVor has so much confidence in the hose's resistance to mildew and rot, he says, "We feel perfectly safe in repacking this hose while it's still wet. This way it's always ready when we need it."

If you need more convincing that BFG Diamond hose is a good buy, talk to a B.F.Goodrich distributor. He'll explain other benefits of this hose—demonstrate how BFG's end protection prevents blowouts in the coupling area, show you the Koroseal swivel gaskets that seal with hand tightening, never have to be replaced. *B.F.Goodrich Industrial Products Co., Dept. M-185, Akron 18, Ohio.*

B.F.Goodrich

FIRE HOSE



On-the-spot photo, E. St. Louis, Ill., warehouse fire. Courtesy St. Louis Globe-Democrat.

SCOUT—new, fast-striking 13-ft. Fire Truck!

Only 68-in. high, 68-in. wide, on a 100-in. wheelbase, the tough, lean all-purpose SCOUT can get in, get out, turn, park and maneuver almost anywhere. With all-wheel-drive and powered by a rugged, 93 hp., 4-cyl. COMANCHE engine by INTERNATIONAL, it travels at highway speeds or takes off across country. Ideal where heavy equipment is impractical, such as brush or automobile fires or fires on limited-access highways. Equipment includes water tank, pumper or fogger and other supporting auxiliary equipment you would need, like axes, shovels, brooms or respirators. See your INTERNATIONAL SCOUT Dealer or Branch. International Harvester Company, Chicago.

INTERNATIONAL model V-206 answered the bell here...just one in the broadest range of light and heavy duty fire truck chassis in the industry

No town, department or fire is *too small or too big* for INTERNATIONAL fire truck chassis. Production line priced but fire truck designed, the wide INTERNATIONAL range offers you GVW ratings all the way up to 33,000 lbs.

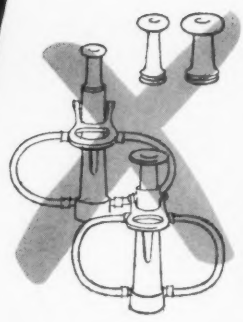
These chassis are backed by a power selection so broad it includes *six V-8 engines alone*, from 155 to 257 hp., with pumping capacities to 1250 GPM. Bolstering this is a wide choice of "6's" that pack from 154 to 212 hp. This lets you custom-fit engine and chassis to your exact needs.

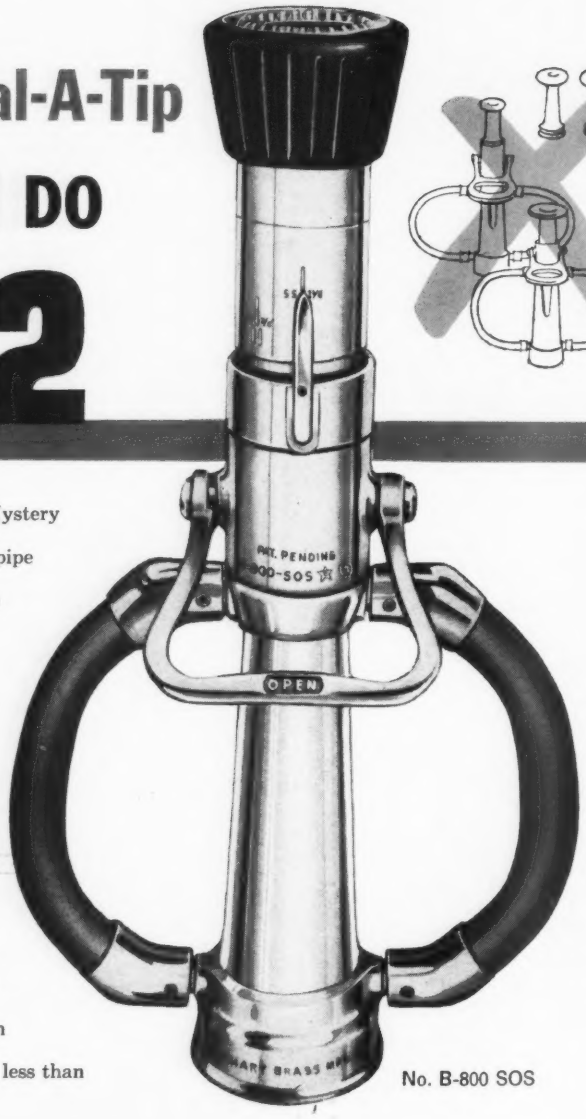
Optional equipment? A wide selection of axles, transmissions, cabs and electrical systems tailors INTERNATIONAL chassis to whatever ladder, hose or pumping apparatus you prefer for your operation.

INTERNATIONAL dual-ignition systems guarantee sure-fire starts. On V-8 engine models V-461 and V-549, both sets of plugs can be fired simultaneously (or each set individually) by simply turning a switch.

INTERNATIONAL® TRUCKS WORLD'S MOST COMPLETE LINE

1 ELKHART Dial-A-Tip NOZZLE CAN DO THE JOB OF 2





No. B-800 SOS

It's a fact. This new patented Dial-A-Tip Mystery Nozzle can replace two nozzles: (1) The Underwriters' required straight stream playpipe combination, and (2) The old style fog playpipe combination. Saves time at the fire scene . . . saves space on the pumper . . . saves money, too! This nozzle has three calibrated straight stream positions: ⅞", 1" and 1⅛" which at 100 p.s.i. nozzle pressure throw 175, 225 and 250 G.P.M. respectively. It is also rated at 275 G.P.M. at 30° fog at 100 p.s.i. *These gallonages are verified by Underwriters' Laboratories tests.* Actually, any gallonage can be dialed in the straight stream position from 250 G.P.M. down to that of of a booster hose. In addition, the nozzle has an adjustable seat, raised stream indicators and Mystery nozzle teeth. An important design feature of the B-800 SOS places approximately 80% of its weight in front of the playpipe handles. This helps balance the weight of the hose and makes it easier to handle. By making the shutoff an integral part of the playpipe, the weight of this nozzle has been reduced 20% to 25% less than comparable playpipe combinations.

Normally supplied with ladder hook and rigid 2½" base, available with swivel base. Can be ordered without ladder hook.

Base thread 2½". Bottom of tip and top of playpipe Underwriters' or any 1½" thread. Polished Brass or Chromium plated finish.

For fog tip only, specify No. B-200 SOS

We have contacted rating bureaus in many sections of the country and have been assured that if a department were to substitute the No. B-800 SOS for the required straight stream stacked tip nozzles, they *would not be penalized* in the grading of their departments. We urge you to contact the insurance Rating Bureau in your state for verification.

No. DB-200 SOS

Dial-A-Tip Direct Connection Nozzle

Elkhart No. DB-200 SOS offers identical features of the B-800 SOS, but is designed as a direct connection nozzle for 2½" hose.

Your Elkhart representative will gladly tell you more about the advantages of the Dial-A-Tip nozzle. Please write our Sales Department for prompt action.

ELKHART BRASS MFG. CO. INC., ELKHART, INDIANA

Barton-American ENGINE VACUUM PRIMER

. . . another superior feature you get in American FIRE TRUCKS

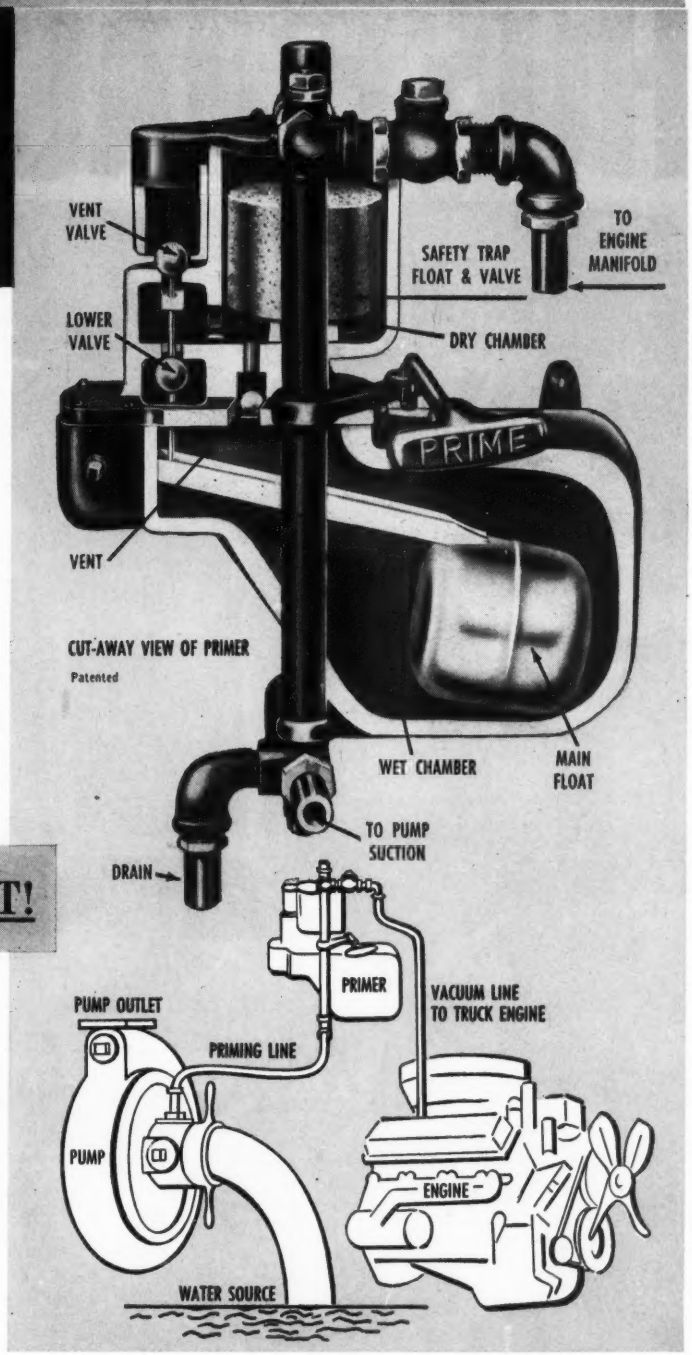
Always operates with like-new efficiency — not affected by engine wear

Employs a simple, trouble-proof principle

Requires no oil, no adjusting, no maintenance

Completely frost-proof

Always dependable



CUT-AWAY VIEW OF PRIMER
Patented

This PRIMER IS FAST!

The Barton-American has *none* of the many disadvantages of rotary priming pumps. Superior to exhaust primers, which require engine speeds as high as 3300 RPM, *the Barton-American readily primes at 1000 RPM.* If the truck engine will run, the Barton-American will prime. Patented dual float design makes it impossible for water to pass into the truck engine, eliminating possibility of engine damage.

For more details on this and other superior features you get in American Fire Apparatus — even though you don't specify them — see your nearest American representative.

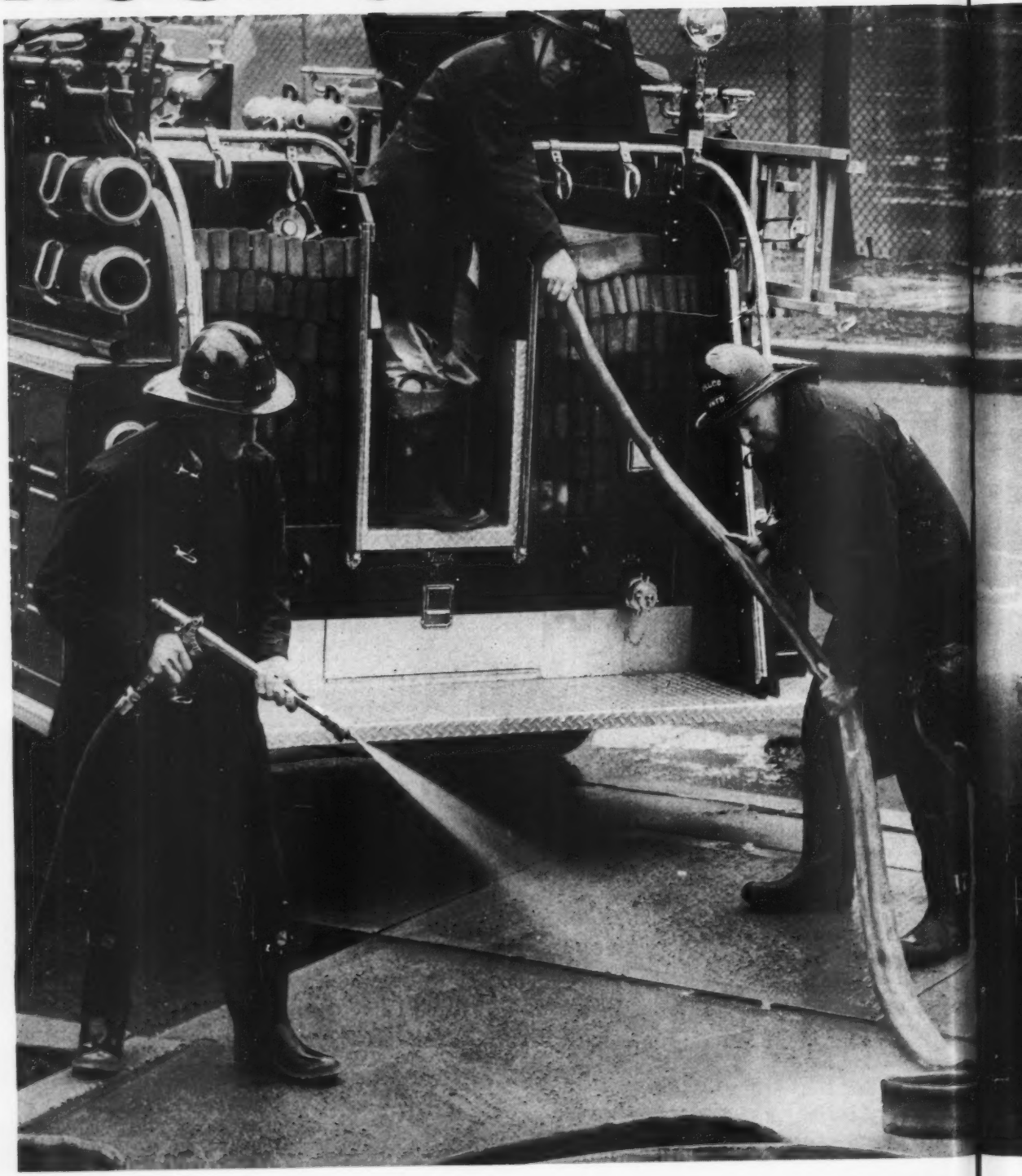
American

AMERICAN FIRE APPARATUS CO.

"Always Pioneering with Better Engineering"

Main Office: Main Street Rd., Battle Creek, Mich. Plants at: BATTLE CREEK, MICH., MARSHALLTOWN, IA., STRATFORD, ONT.

HOSE JACKETED 1



D 100% WITH DACRON®

POLYESTER FIBER

Needs No Drying... Can Be Put Away Wet!

Repack Wet. Hose jacketed 100% with "Dacron"* polyester fiber can be put away wet, because it's unaffected by moisture and mildew. Just wash it down after use, pack it on the truck, and you're ready to go again! It's never out of action on drying towers—so you can operate with less hose!

It's Tough. You can drag it through rubble—stomp on it—splash it with chemicals—soak it in water. This hose will *take it* and come back for more. In one test, hose jacketed 100% with "Dacron" was ready for immediate action after being dragged 8 miles on asphalt at 10 mph. A cotton hose was unusable after the same treatment for only 3 miles. So you can see how hose jacketed 100% with "Dacron" will cut your replacement costs to the core.

Ask your supplier for more information, or write: E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., D. M. 16621, 3rd & Greenhill Avenues, Wilmington 98, Delaware.

*Du Pont's registered trademark for its polyester fiber.

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Better Things for Better Living
. . . through Chemistry

BOARDMAN BUILDS THE PUMPER YOU NEED!

Firefighters in over 200 American communities have found that Boardman builds the pumper that suits their needs *best* . . . because Boardman builds to exact specifications! Boardman pumpers have the features and equipment you need, mounted on the standard chassis of your choice, for quick local service. Your choice of pumps—the Waterous 500 GPM one-, two- or three-stage or the Waterous 750 GPM two- and three-stage—assures the right capacity for your city's needs. And though your pumper will be custom-designed, you'll pay far less than a "custom-built price" at Boardman!

Let Boardman answer your city's fire alarm with the illustrated brochure, *Boardman Fire Fighters*, describing every pumper and tanker in their line. If your need is urgent, place a collect call for immediate details.

BOARDMAN PUMPERS

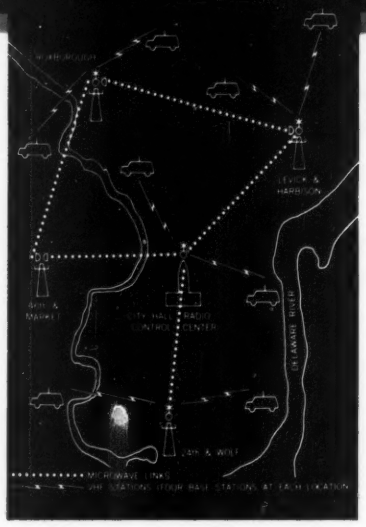
THE BOARDMAN CO
P. O. BOX 1152
Oklahoma City

Philadelphia Installs Ultra Modern RCA Radio Network... Gains Split-Second Control of its Police Patrol Fleet

Completely equipped Master Control Room at City Hall. Unique car-in-use display board (in background) automatically indicates police cars in service.

With this new RCA communications system, Philadelphia has split-second control of its patrol fleet and is able to dispatch police action immediately to any area of the city.

Sixteen base stations (at four key locations) blanket the city, greatly increasing the speed of police radio traffic. In each area, two of the base stations serve police channels, one serves a detective channel, and the fourth is reserved for emergency and Civil Defense communications. The entire city can be covered from any one of these regional stations.



This network of base stations can be operated as independent regional networks, or joined for city-wide service.

Philadelphia's Network Comprises:

570 RCA UHF 2-Way Radios in police patrol, emergency and other vehicles.

Standard RCA CW-20A Microwave Radio Relay System for remote operation and control of base stations.

RCA transistorized public address amplifiers and external loudspeakers for 250 vehicles.

Multiplex equipment for simultaneous operation of four base stations transmitters in each area.

Special alarm circuits operated by microwave.

For further information contact your RCA Communications Specialist, or send coupon.

RCA®

The Most Trusted Name in Radio

RADIO CORPORATION OF AMERICA

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RCA Telecommunication Center, Dept. C-50
Meadow Lands, Pa.

☐ Please send me FREE literature on the new RCA Transistorized "LD" Mobile Radio.

☐ Have RCA Communications Specialist contact me and explain why this is today's best value in 2-way radio.

NAME_____ TITLE_____

ORGANIZATION_____

ADDRESS_____ PHONE_____

CITY_____ ZONE____ STATE_____

ARE YOU THINKING AHEAD ON FIRE APPARATUS POWERPLANTS?

Perhaps you are one of the progressive fire officials throughout the country who are showing a strong interest in new types of apparatus powerplants. Today's ever increasing protection and budgetary problems may be causing you to look for even better apparatus performance, dependability, and operating economy. If so, you should:

CONSIDER THE ADVANTAGES OF DIESEL-POWERED APPARATUS

Diesel power is the only new power for fire apparatus proved by millions upon millions of miles of actual truck service. Diesel engines provide excellent road and pumping performance because they reach peak h.p. at lower engine speeds than gasoline engines and they excel even the finest gasoline powerplants in dependability and long life. Moreover, they can run 35% longer on each tankful of fuel and idle for hours with no harm to engine.

Equally important, they can cut operating costs as much as fifty percent. Basically more efficient, they provide substantially greater fuel mileage than the best of gasoline engines, using cheaper fuel. And they greatly reduce maintenance costs because they are far more trouble-free. Of all automotive diesel engines built in this country today, the record shows that the leader in performance, economy and dependability is the . . .

MACK THERMODYNE® DIESEL

WHAT ARE THE ADVANTAGES OF THE MACK THERMODYNE® DIESEL?

1 Maximum performance at operating and pumping speeds. Develops 230 HP at 2300 rpm and 583 lb.-ft. of torque at 1600 rpm. Turbocharged for peak efficiency.

2 Minimum fuel consumption. The inherent efficiency of diesel power gives the advantage of being able to pump 35% longer on a tankful of fuel. Reduces need to refuel during long pumping assignments, eliminates danger of handling highly flammable gasoline, and also eliminates danger of carbon monoxide fumes. Diesel fuel is considerably cheaper than gasoline and contains more BTU's.

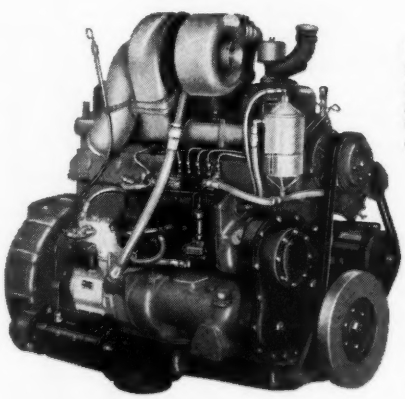
3 Maximum power at altitude. No power loss at all up to 6000 feet above sea level with the Mack Turbocharged diesel and only a 2% loss per 1000 feet above 6000. With gasoline power the loss is 3% per 1000 feet right from sea level on up.

4 Maximum dependability 4-cycle, 6-cylinder design. Cooler-running. No spark plugs to foul. No ignition systems to short out. The most dependable engine ever made by Mack—the standard of dependability.

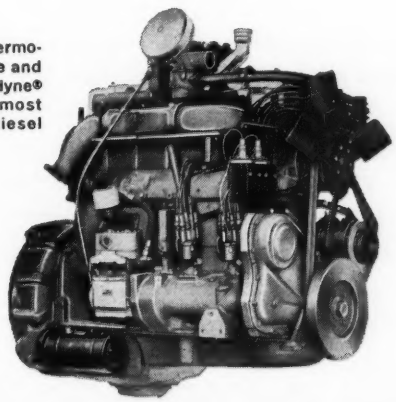
5 Minimum maintenance. Mileages of 300,000, 400,000—even 700,000 miles in truck service—before engine overhaul means thousands of engine hours in fire service. Will not foul up during long periods of idling. Built with typical Mack strength and servicing ease. Similarity to Mack Thermodyne® gasoline engines simplifies mechanics' training—over 350 Mack service centers expedite servicing and parts supply.

The famous Thermodyne® diesel engine is made by Mack. It is part of the exclusive Mack concept of Balanced Design . . . by which all major components are Mack-built to the highest standards of the industry . . . to work together to a degree of efficiency unmatched by apparatus assembled with purchased components. We build them —we stand behind them 100%. Who else can say the same? Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ontario.

6487



Note similarity of Mack-built Thermodyne® diesel and gas engines! Size and general appearance of Thermodyne® gasoline engine (right) are almost identical with Thermodyne® diesel engine (left).



MACK FIRST NAME FOR FIRE APPARATUS

COMPLETE LINE OF PUMPERS . . . 500 TO 1250 GPM . . . SQUAD AND HOSE WAGONS . . . AERIALS 65' TO 146' . . . COMBINATION LADDER TRUCKS

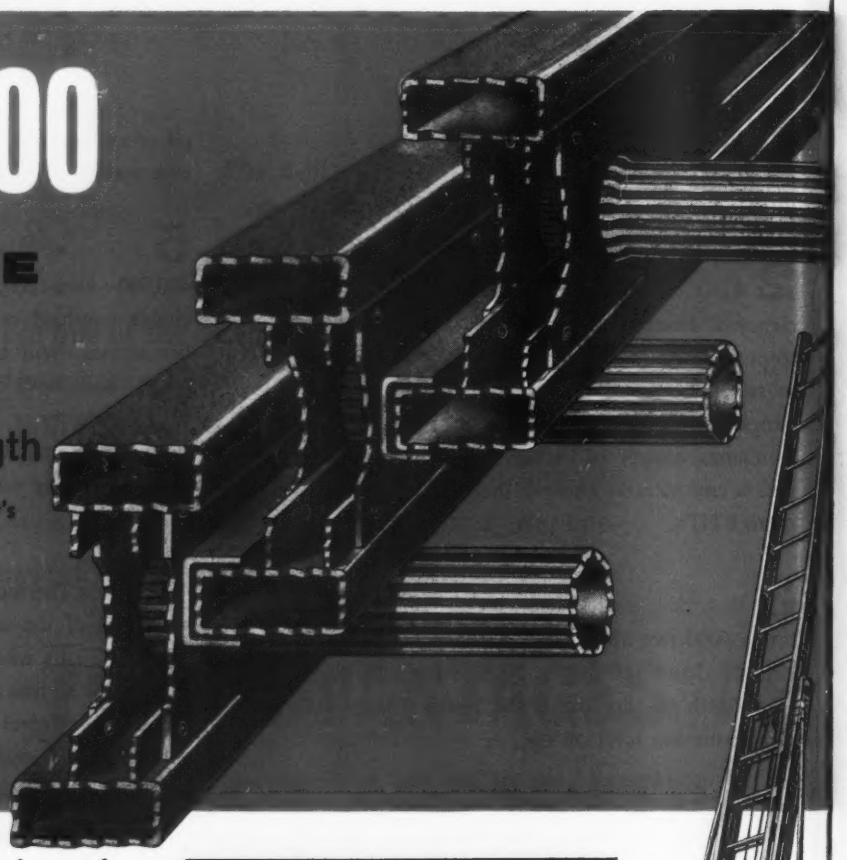
The Fire Ladder With The Most Strength, Safety, Dependability

Series 500

FOR SERVICE TRUCKS...

With *Tubular* strength

The Tubular Construction of Duo-Safety's 500 Series incorporates the inherent strength of a rectangle, a channel and an "I" beam—combined to provide the ultimate in strength and safety.



Here's the aluminum ladder for service trucks that has won such wide-spread approval for its great strength and extraordinary safety, it has been adapted nationally by fire departments as standard equipment. In addition to the rugged strength of famous Tubular Construction, construction features include: double parallel fins; double set of truss plates; ribbed, extruded rungs, electrically welded to outside truss plates; non-shearing steel rivets. All add up to the finest in heavy duty ladder equipment. Available in all standard ladder sizes from 10′ to 60′.

CHECK THE *Complete* DUO-SAFETY LINE

SERIES 1000	For Pumper Use	24′ to 30′	2¾″ CHANNEL RAIL
SERIES 900	For Pumper and Service Trucks	24′ to 40′	3¼″ CHANNEL RAIL
SERIES 1200	For Service Trucks	35′ to 55′	3¾″ CHANNEL RAIL
SERIES 500	For Service Trucks	10′ to 60′	TUBULAR RAIL

DUO Safety

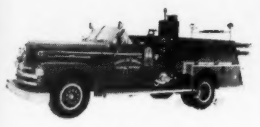
Write for Free, Colorful File Catalog

DUO-SAFETY LADDER CORPORATION OSHKOSH, WISCONSIN

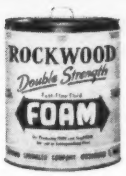
In Canada: La France Fire Engine and Foamite, Ltd., Toronto

The moment they get there . . .

They put out fires faster!



Rockwood FOAM liquid provides a smothering, fine-bubble blanket over flammable liquid fires. Rockwood's FW Eductor introduces FOAM liquid into water streams.



You get faster extinguishing action when refinery and chemical fire trucks are equipped with Rockwood FOAM apparatus

Once a Rockwood-equipped truck reaches the fire, its FOAM system starts working — enabling fire fighters to hit harder and finish faster.

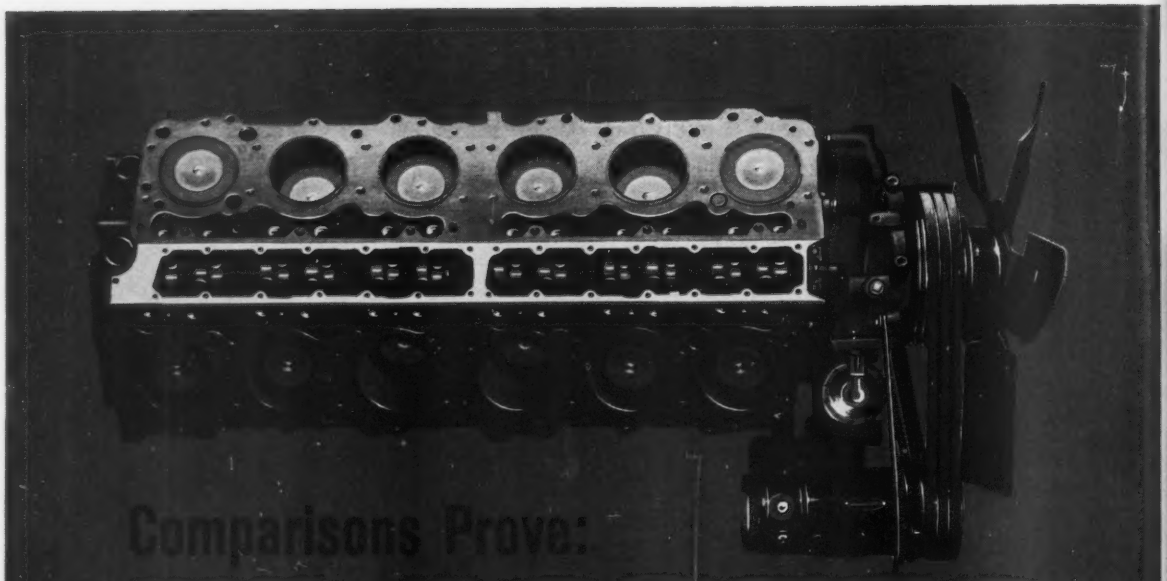
That goes for all the trucks shown here — just a few of the large number that carry FOAM equipment, developed by Rockwood for specialized fire fighting service at refineries and chemical plants throughout the country.

To these industries Rockwood offers the most complete line of specially engineered systems, devices and accessories for FOAM fire trucks — as well as FOAM systems for protecting refinery and chemical tanks.

Rockwood makes the world's most complete line of specialty turret nozzles. Providing the power so vitally needed at flammable liquid fires, these nozzles can deliver up to 10,000 GPM of expanded FOAM. All are adjustable for handling a solid FOAM stream, FogFOAM, WaterFOG or solid water stream. For details on the many Rockwood products that have proved their exceptional ability in refinery and chemical fires send for illustrated booklet. Rockwood Sprinkler Company, Portable Fire Protection Department, 446 Harlow St., Worcester 5, Massachusetts. Distributors in all principal cities. Rockwood Sprinkler Company, A Division of The Gamewell Company, A Subsidiary of E. W. Bliss Company. *Rockwood engineers water . . . to cut fire losses.*

ROCKWOOD

PORTABLE FIREFIGHTING EQUIPMENT



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- Sure starts every time without complicated, troublesome dual ignition.
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- Proved by modern fire-fighters everywhere.

YOU GET BUILT-IN BONUSES IN EVERY GMC

EXCLUSIVE, RESPONSIVE V-6 ENGINES, TOO!

. . . only from GMC. Get faster starts and responsive acceleration. Get dependable, lasting performance.

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TRUCKS
FROM ½ TO 60 TONS

Why is one name on more fire radios than all others combined?

Experience has proved that Motorola builds a rugged radio for a rugged job.

What makes Motorola more rugged than others? Here are a few examples:

Precision tuning coils are made *right* to stay on frequency...no matter how bumpy the road. Critical selectivity circuits are sealed in plastic, guaranteed for life. Every major component is secured against breakaway and "whip."

The result of this built-in ruggedness is longer equipment life, fewer outages, less maintenance and *lowest communications cost.*

Can you afford to rely on anything less than Motorola?

For full details on Motorola radio—and how it can give your department the most *dependable* communications available today—write Dept. AFE 148.

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The Original STRIPED SAFETY COAT

The striped safety coat for firemen is an Original Midwestern development — first in the field — a leader ever since its introduction 19 years ago.

The BRILLIANT YELLOW stripes are actually rubberized into the black rubber . . . an exclusive feature that defies comparison with substitute or imitation models where the stripes are glued, sewed or painted on the material.

When working under hazardous conditions in smoke, fog, dust or darkness, firemen deserve the superior quality, design, comfort and safety features offered by the Original Midwestern Safety Coat.

Many Fire Chiefs who insist on the best of protection for the men of their department specify MIDWESTERN SAFETY garments to the last man because every outstanding Midwestern feature is original. All fabrics are extremely soft and flexible and have the qualities to stay that way at varying temperatures. You can always distinguish a MIDWESTERN SAFETY garment by the soft feeling of the material in both rubber and fabric type garments.

We have always designed and constructed our garments with the one thought . . . that every fireman deserves complete protection in his hazardous work of protecting life and property against the ravages of fire.

COMBINATION BUNKER SUITS

MIDWESTERN SAFETY MANUFACTURING CO.
Mackinaw, Illinois

☐ Have Midwestern representative call with complete information and prices.

☐ Send Free Catalog and fabric samples.

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The many weights of both rubber coated and cloth type materials offered in our MIDWESTERN Quick-Hitch suit makes this combination ideal for all sections of the domestic market and export. Also, both coat and bunker pants may be purchased with or without detachable wool linings.

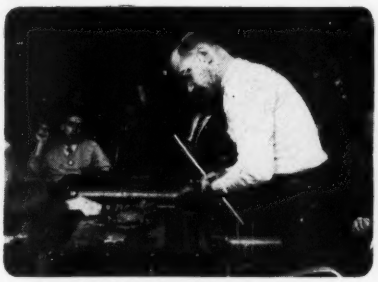
NONE GENUINE WITHOUT THIS TRADE

MIDWESTERN SAFETY MFG. CO., Mackinaw, Ill.
Located in the heart of the Greater Peoria Manufacturing Area
Manufacturers of the Famous MACKINAW Safety Coat

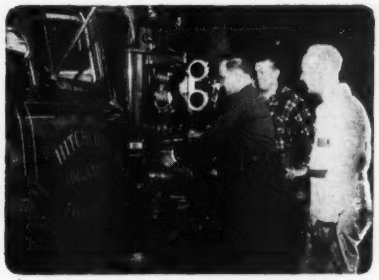
A FIRE CHIEF GOES TO SCHOOL

Typical of the thousands of fire chiefs and crewmen that each year attend the John Bean Fire School, Chief A. G. Terrabonne of Hitchcock, Texas is seen here as he completes his course with a group of fellow firemen from all parts of the country. Chief Terrabonne knows that keeping abreast of modern fire-fighting methods, like the John Bean High-Pressure Fog System, is the surest way to guarantee his community the safety and protection with which he is entrusted. That's why this free training by John Bean fire-fighting experts is available the year 'round to you and your men as a part of the regular service that goes with every John Bean truck. Put yourself in Chief Terrabonne's place as he is seen below in some of the many stages of his own training.

ADVANCED FEATURES of the John Bean Firefighters are first learned in the classroom, where Chief Terrabonne and his group study the proper function and operation of the equipment they will soon be using.



FIRST-HAND EXPERIENCE is an important part of each fireman's training at John Bean. Here Chief Terrabonne learns the proper care and maintenance of his new equipment by actually doing the work himself under expert supervision.



GETTING THE FEEL OF IT! Following a day in the classroom, Chief Terrabonne and one of his crewmen, Cecil Cruse, receive individual training from factory specialists on the operation of their own equipment.

LIVE FIRE FIGHTING of both Class 1 and Class 2 fires is practiced by each student at the John Bean proving grounds. Here, Chief Terrabonne quickly knocks out a building fire with John Bean High-Pressure Fog.

BURNING OIL TANK . . . . one of the most difficult of all fires to combat . . . is easily and quickly put out by members of Chief Terrabonne's group with the triple action of John Bean High-Pressure Fog.

18 GALLONS OF WATER—18 SECONDS LATER . . . and the raging fire in this 18 x 36 foot oil pit is completely extinguished! Dramatic proof of what John Bean High-Pressure Fog can do when the going is rough.

BETTER EQUIPPED — BETTER TRAINED! As Chief Terrabonne and Cecil Cruse take delivery of their new truck and return to Hitchcock, Texas, the people there can well be thankful. For with them they bring the confidence and skill to give their community the hard-hitting, split-second protection for which John Bean is known the world over.

See your John BEAN representative, or write today to arrange for a High Pressure Fog Fire Fighter demonstration

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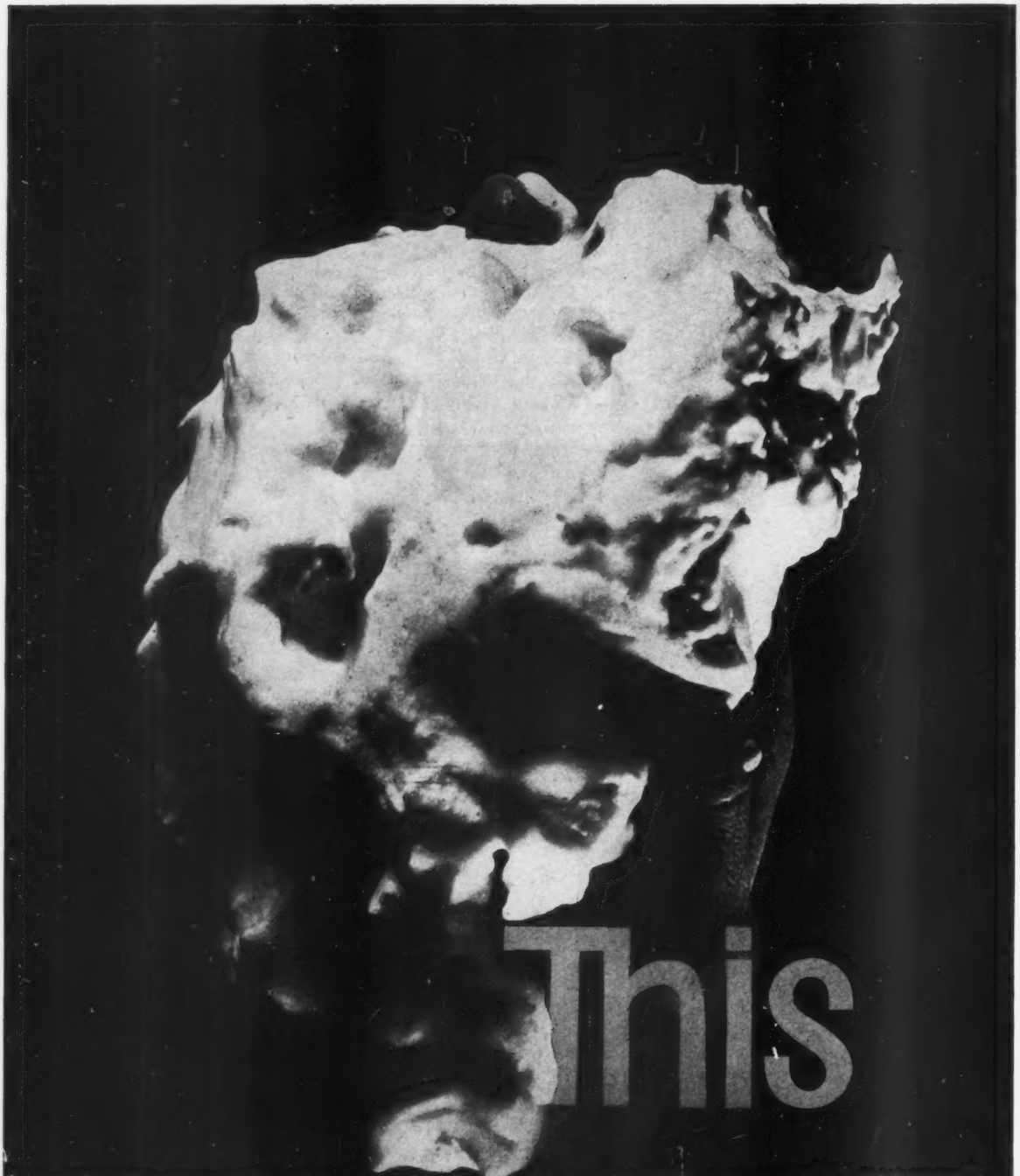

is what counts in fighting fire in flammable liquids

When fire breaks out, can you be sure that your foam liquids will produce foam like this . . . stable, adhesive, heat-resistant, yet still free-flowing?
You can be sure if you use Aer-O-Foam Liquids. Regardless of storage time, they perform with peak efficiency.

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National Foam System, Inc.
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Two New Wooster

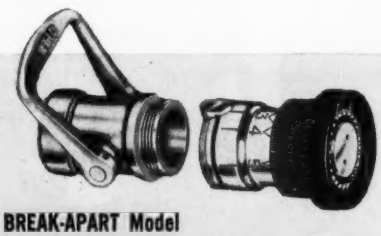
VARI-A-FOG

NOZZLES

meet every fire-fighting situation

INTEGRAL Model
with one-unit tip and ball valve.

Now available in two styles: *Super* (same GPM all settings) or *Standard* (varying GPM). Both styles in your choice of *Integral* or *Break-Apart* model. Operation is simple, smooth, positive . . . rugged construction minimizes wear and breakdown! Less than one complete turn dials the exact stream you prefer—from a 90° wide angle right down to a straight stream. Hose sizes ¾" to 2½", capacities 22 to 300 GPM. Order today from your Fyr-Fyter distributor, listed in Yellow Pages under "Fire Protection Equipment" . . . or write to The Fyr-Fyter Company, Dayton 1, Ohio.



BREAK-APART Model
with cushion ball shut-off, for adding applicator, extending hose lines, converting to foam or wet water.

WOOSTER BRASS Fyr-Fyter

products of THE FYR-FYTER COMPANY

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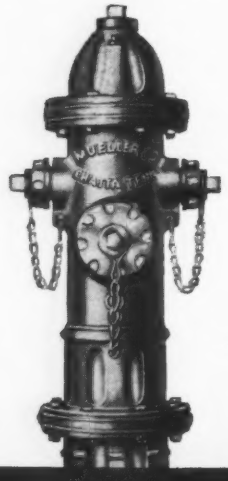
AWWA IMPROVED FIRE HYDRANTS



BRONZE WEATHER CAP—Keeps water away from operating nut and prevents tampering.

OIL FILLER PLUG—Check oil level quickly without removing bonnet.

OIL RESERVOIR—Automatically lubricates stem threads and bearing surfaces.

DRY TOP DESIGN—Threads and bearing surfaces are sealed from water.

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NON-KINKING CHAINS—Attached under each individual nozzle.

SAFETY STEM COUPLING—Breaks apart without bending the stem. Repaired in minutes without digging and with no loss of water.

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Once set, you can forget about a Mueller Improved Hydrant. With little or no attention, the Mueller Hydrant is ready for action in any weather.

COMPRESSION-TYPE MAIN VALVE—Positively closed by water pressure. Of special wear and damage-resistant material. Permits repairs without shutting off water.

BRONZE SEAT RING—Straight threads, with copper-asbestos gasket, permits easy removal.

DOUBLE DRAIN VALVES—Empty barrel completely. Flushed with each use.

BRONZE CAP NUT—Locks stem and seals threads against corrosion.

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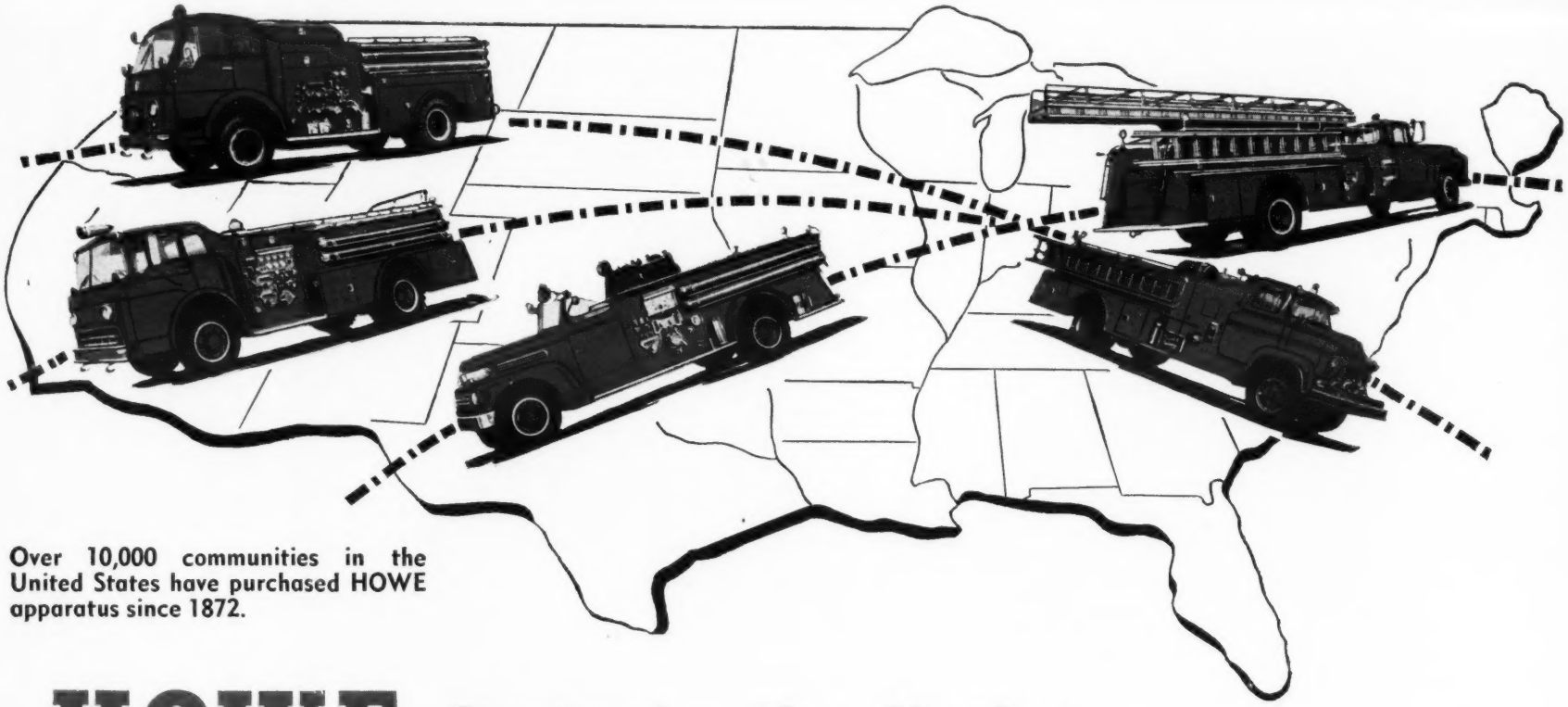

Over 10,000 communities in the United States have purchased HOWE apparatus since 1872.

HOWE Protects the Nation

The impressive record established during four generations proves that HOWE builds fire equipment that **really does a job** in protecting the property and people of our great nation—and HOWE builds to **your** specifications, to suit the special needs of **your** community. Let HOWE equipment protect **you.**

"dependable fire apparatus since 1872"

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She has a right to know — it could mean her life.

Are the schools in your city fully protected against fire? No community can have complete protection without Master Fire Alarm Boxes to provide direct line to Fire Department Headquarters. Gamewell Master Fire Alarm Boxes have been chosen because they provide the *most positive* and practical solution to the problem — *The heart of a master plan* to protect life and property.

The Gamewell Company offers your community positive fire alarm protection, backed by the largest plant in the world engaged exclusively in the manufacture of fire alarm systems and emergency signaling equipment. Assure your community's safety, contact Gamewell for complete information. There's a Gamewell office near you. Safety is everybody's business — *our* profession.

Write THE GAMEWELL COMPANY, 1258 Chestnut Street, Newton Upper Falls 64, Massachusetts. A Subsidiary of E. W. Bliss Company.

BLISS Gamewell®

FIRST... WHEN SECONDS COUNT

FIRE
ENGINEERING
THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877
VOL. 114, NO. 12 DECEMBER, 1961

Review School Fire Safety

It has become customary during the month of December for persons involved in fire protection to contemplate the degree of success that has been achieved in school fire safety throughout the year as it draws to a close. This reflection has been brought about by the knowledge that just three short years ago 95 pupils and nuns died in the disaster at Our Lady of Angels School in Chicago. Since that catastrophe a large number of dedicated persons have made great efforts to assure that our schools are made safe, and as quickly as possible.

Foremost among the many contributions have been the series of large-scale school fire tests conducted by the Los Angeles City Fire Department, with the cooperation and assistance of fire protection agencies, a number of manufacturers of safety equipment and many education officials. By means of these experiments, it has been possible to determine the effectiveness of sprinklers, fire and smoke-detection equipment, as well as some building construction and finishing methods and materials. All of the test procedures and results have been recorded and analyzed and the findings published as objectively as possible for the record in order that fire protection personnel, educators, architects and builders may have the benefit of these studies. Acting on this guide, it should be possible to guarantee future life safety to pupils and teachers, as well as safeguard the investment made by the citizens or organizations in these structures.

Over the past 12 months FIRE ENGINEERING reported 68 major school fires in its "What's Burning" column. During 1960 a total of 98 schools were listed as having been destroyed or seriously damaged by fire. Since these figures cover only a two-year period, they signify little in identifying a trend. They may supply ammunition to the cynic leading to the comment that if this country burns schools at the 1960 rate of nearly two per week, then the fire total for the 1961 and succeeding years should drop. This conclusion can be based on the supposition that we are burning schools faster than we are building replacements and as the more hazardous occupancies are eliminated, the fire totals must drop.

The optimistic viewpoint is that the knowledge gained since the Chicago fire focussed attention on this area has resulted in increased safety, and as time goes on, the impact of all the effort will be recorded in still fewer reports of large school fires. The danger in the optimistic viewpoint is that it may lead to complacency and the idea that greater effort is unnecessary. This may then result in a lessening of endeavor, and in time, the same conditions which led to the 1958 disaster may again occur.

To prevent this thinking from gaining strength, it may be well to review at this time the report of the Chicago "Blue Ribbon" Coroner's Jury which stated in part:

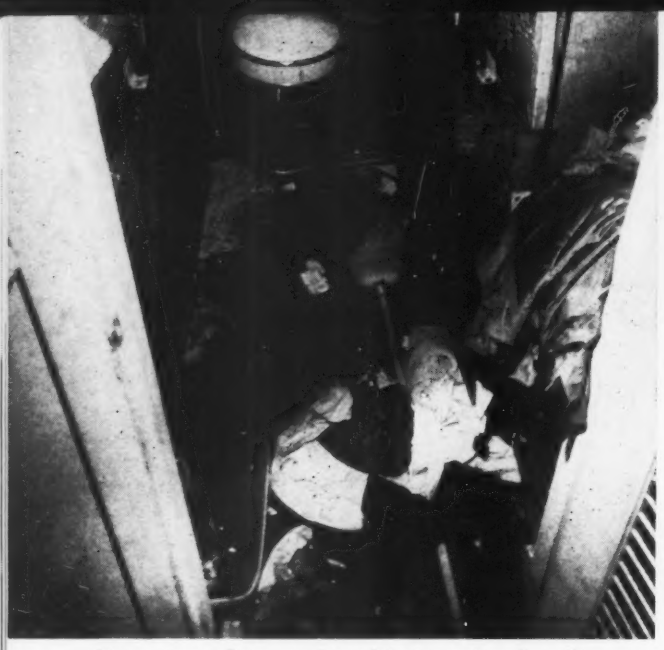
"Proper fire protection is not a luxury—it is a necessity. It is just as important to a school as having a heating plant or proper desks." and it further stated, "To get proper fire protection, all that is needed is (a) the desire to have it, (b) money, and (c) time."

Based upon the efforts expended to date by all interested parties, there is a definite desire for sound fire protection. Some money has been forthcoming in most areas, but, as is common in this and other endeavors, it is usually limited. Certainly time has been available in abundance. However, no one can be sure that it will not run out, and another catastrophe occur, in those sections of the country where this precious commodity is being wasted, while conflicting positions are resolved.

It is definitely time to review this entire subject and ask the question, "Have we, the fire service, the educators, the legislators and the public, fulfilled our responsibility in these past three years? Can each of us, in thinking of the schools in our own community, conscientiously say, "We have done everything possible to safeguard lives and property."?

Unless and until this can be answered in the affirmative, we are asking our schoolchildren and teachers to risk their lives each time they enter a school building. This is a responsibility that all of us bear and we must be certain that it is discharged.

Hugh O'Brien



Narrow space between air-conditioning units, where 16 persons tried to escape heavy smoke. Window was covered with plywood after fire. A portion of louvered door through which return air normally was drawn may be seen at lower right of photo

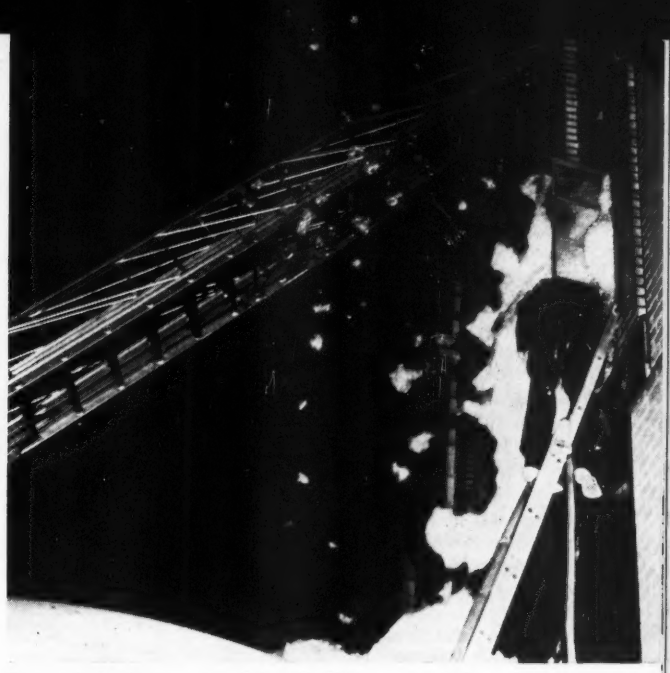
Except for discoloration of wall, the building above the first-floor level was hardly damaged. The carpeting on the main stairway is not even scorched. Vinyl tiles which covered the main floor may be seen in the right of the photo

Large trailer unit pumped foam into front of store, and is credited with bringing the fire under control

Although close to safety . . .

Five die in apparel shop fire

Greensburg, Pa., chief credits new foam system with controlling blaze



Some of the foam pumped into building escaped through windows on upper floors. Firemen use hose stream to keep foam from pushing out

All photos by James W. Smail, photographer Greensburg Vol. F. D.

By FRANK HANIFIN

SMOKE KILLED five persons when fire broke out in the LaRose Shop, a women's wear store in Greensburg, Pa., October 19. The owner and four of his employees were trapped only 20 feet above the street and within 25 feet of two stairways, in a well-lighted store during business hours. Although the fire department was summoned promptly and responded without delay, the five died before firemen reached them.

In appearance and in general construction, the shop did not differ greatly from similar retail stores in practically every community in the nation. During the next three weeks, these stores will be more crowded than at any other time. A study of the Greensburg disaster may suggest action which could prevent a similar or worse tragedy.

The store occupied a three-story and basement, brick-joist building approximately 30 feet wide and 120 feet deep at 124 South Main Street, in the center of the business district. The town, about 30 miles southeast of Pittsburgh, is one of the principal shopping centers of Pennsylvania.

Fire escape removed

The building was erected in 1913, and many years ago had been used as a motion picture theatre. It was remodeled in 1956, and at that time a fire escape at the rear of the building was removed. Unpierced brick walls separated the La Rose shop from a five-and-ten store to the north and a clothing store on the south. To the west, behind the stores, an alley about 20 feet wide ran from Second Street to Pittsburgh Street.

Unprotected steel columns in the basement supported a stringer, consisting of four 2 by 10's spiked together, which ran from front to rear of the store. The stringer gave support to 2-by-10 floor beams which extended from the side walls to the stringer. The beams supported wooden flooring which had been covered with 1-inch hardboard and topped with vinyl tiles.

Partitions had been erected to provide dressing rooms on the second floor. Air-conditioning ducts had been installed, and shelves had been set up along the walls. Otherwise, there was not a large amount of combustible trim, nor many concealed spaces. The first, second and third floors had metal ceilings. The sales areas were located on the first and second floors. Except for a seamstress' shop, the third floor was used for the storage of mannequins, other display material and merchandise.

The store was not protected by sprinklers, fire detectors or an alarm system. As far as can be learned, there were no portable fire extinguishers in the building.

The basement

Because of a sharp decline in the terrain, the front part of the basement was completely below street level, while the floor in the rear of the basement was only about 6 feet below the grade of the rear alley. There was no ceiling in the basement; the beams supporting the first floor were not covered. A furnace room in the rear (northwest corner) of the basement did, however, have a plaster ceiling and was separated from the rest of the basement by concrete block walls and a fire door. This room was scarcely damaged by the fire.

The basement was used principally for receiving, unpacking and storing merchandise. October 19 was the first of three special sales days, "Union-Dixie Days," intensively promoted by the local merchants, and the basement contained more than the usual stock. A shipment of acrylic fiber sweaters had been received that day. It is believed that the basement also contained large numbers of other garments of both natural and synthetic fibers, many wrapped in plastic film. Investigation disclosed that employees were accustomed to take their "smoking break" in the basement. A janitor, who was in there at about 7 p.m., later said that he observed nothing unusual at that time. No one admits being in the basement after 7 p.m.

Exits

A steel stairway, 50 inches wide, went from the main floor to the second, along the north wall of the building, a little more than midway from

the front entrance. Beneath this main stairway, a wooden stairway led to the basement. A wooden, service stairway in the rear (southwest) area of the store extended from the basement to the third floor. Neither was enclosed.

With the exception of the basement, the entire store was air conditioned. The main fresh air intake was in a small room in the rear (northwest) section of the second floor. Two 5-ton units in this room sucked fresh air in from the rear alley through a louvered metal grill in the lower part of a window. Sheet metal extended from the grill to the window framing, completely blocking the lower half. The upper half was glazed with ordinary window glass. Return air from the first and second floors was sucked into the room through a louvered door and through a louvered opening directly above the door. This recirculated air was mixed with fresh air and pushed out into the ducts. The room was 5 feet deep from door to window, and there were 26¾ inches of clear space between the two units. In addition to these two units, a 10-ton unit was located on the main floor. There were no fire dampers in the ducts, and if there was any provision for smoke removal, it evidently did not operate.

Fire department

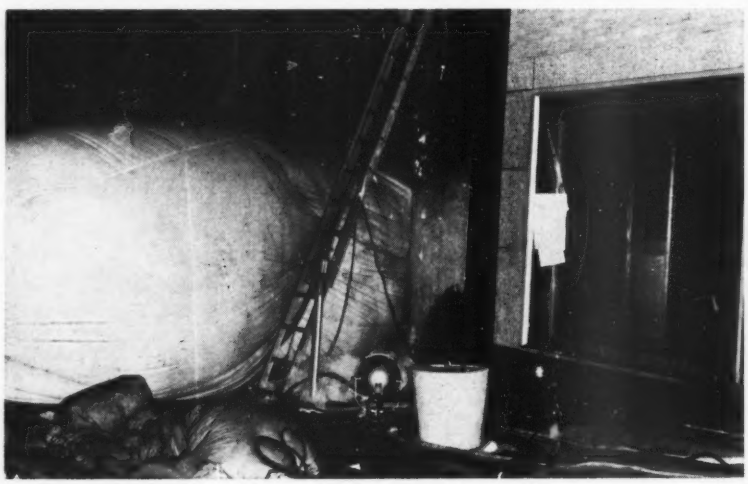
Greensburg is protected by an all-volunteer fire department with 432 members, under the command of Fire Chief J. Edward Hutchinson. The department is highly regarded in the community for efficiency and devotion to duty, and Chief Hutchinson has a reputation as a progressive, dedicated fire chief. Six companies are housed in five stations. Basic apparatus consists of four 1,000-gpm pumpers, an 85-foot aerial ladder truck and one 1,000-gpm quad. Special apparatus includes a C. D. rescue truck, a salvage truck, a 10-kva lighting unit and two high-expansion foam units.

The department may be summoned by a municipal fire alarm system with an alarm box on every corner in town, or by telephoning the city hall where police are on duty 24 hours daily to receive and transmit alarms. When a box is pulled, the system automatically activates five air horns and a bell. All units respond to every box alarm.

Recently adopted code

Greensburg adopted the full National Fire Code last spring. Plans for new buildings and major alterations to older buildings must be approved by the State Department of Labor and Industry, which enforces the Fire and Panic Law. The fire marshal is a member of the State Police. The Greensburg Volunteer Fire Department has a 12-man inspection team, but in the four or five months since adopting the National Fire Code, this group has been able only to investigate complaints.

Firemen rescue two of the five persons who fled to front of second floor. Lights on second floor remained on until the utility company cut the power at 10 p.m.



In five minutes, the large generator pushed enough foam through this muslin tubing to fill most of the basement, first and second floors

Stores in the shopping center customarily remain open until 9 p.m. on Thursdays. Forty persons were in the LaRose shop shortly after 8 p.m., October 19, a damp, warm, windless evening. No one was in the basement. The only one on the third floor was a 19-year-old girl employee who fled to the second floor at about the time the fire was discovered. There were 19 persons on the main floor; 12 customers and seven employees. Ten customers and 11 employees (including the girl from the third floor) were on the second floor.

One of the occupants of the first floor smelled smoke which seemed to be rising from the basement around an electrical conduit that came through the floor along the south wall. Simultaneously, smoke was observed coming from the basement through the rear stairway. Employees tried to use first one and then another phone to send in an alarm, but both phones were "dead." An alarm was sent from a street box at 8:18 p.m.

With surprising rapidity, heavy acrid smoke filled the building, and the lights on the first floor failed within minutes. All those on this floor managed to escape, however. One employee later told of suddenly finding herself, without any warning, engulfed in thick dense smoke.

Fire department response

The fire building is within three blocks of the central fire station, and units were at the scene within five

minutes. Greensburg has a 26-man, fully paid police department. Many of the policemen are also volunteer firemen and respond with the fire department in their off-duty time. Consequently, they are highly conscious of the importance of quick response, and clear traffic as soon as the fire horns sound. At least 100 firemen responded when the alarm sounded. Including others who reported later, a total of 246 men worked at the fire.

According to survivors, the store's owner tried to guide those on the second floor to the rear stairway, but dense smoke forced them back. Five made their way to the front of the store, and escaped through small windows and down fire ladders. The other 16 lined up in a file extending out from the cramped air-conditioning room. Someone tried to tear the fresh air intake grill and the surrounding sheet metal from the window. When a 1,000-gpm pumper, one of the first units to arrive, rolled into the alley, a man was at this window shouting, "My God! Get us out of here before we suffocate!" The firemen immediately raised a 24-foot extension ladder to the window, and within minutes 11 persons were brought to safety.

When the firemen arrived on the scene, the alley was already so filled with dense, acrid smoke, that men were overcome on the ladder outside the building. Those rescued from the store were semiconscious and in a state of extreme shock; some later had no recollection of being brought down the ladder or of talking to the firemen. None of the 11 mentioned that the owner and his four employees had held back to permit the others to escape first, and that these five were still in or near the small room. By the time the 11 were rescued, the five victims had evidently been overcome.

Fire fighting

The aerial truck and the quad were among the first units to arrive at the front of the building. Some of the firemen immediately raised extension ladders from the quad to the windows at the front where five persons were rescued. Others raised the aerial to the roof to ventilate the building, and then dropped it down to a big window in the front of the third floor to afford more ventilation. A line with a 500-gpm fog nozzle was then taken up the aerial and into the third floor through this window. Because of the dense smoke pouring from the second floor, it was at first believed that the fire was there. The general alarm was turned in at 8:30 p.m., and units from the surrounding area responded.

Two firemen wearing self-generating oxygen masks advanced a line with a 1½-inch fog nozzle through the front entrance and down the stairway under the main steel stairs. They could see flames against the ceiling about the center of the basement. Later, a hole was cut in the floor near the top of this stairway, and a Bresnan distributor was operated into the basement. When this stream did not seem to be effective at this location, a hole was made in the floor near the front entrance, and the distributor was operated into the basement there. Eventually, six 2½-inch lines and fourteen 1½-inch lines, with an estimated total delivery of 2,900 gpm, were operated principally at the front of the building. Nevertheless, the fire continued to spew out thick, choking smoke.

When the pumper mentioned previously rolled into the alley, two private cars parked there, partially blocked access. The pumper had to be positioned close to the building against a doorway to the basement. Because of the position of the pumper and the density of the smoke in the alley, the doors to the basement were not visible. Most of the lines were therefore advanced at the front of the building.

Foam generator ventilates alley

A jeep-mounted foam generator, the smaller of the two units in the Greensburg department, was moved into the alley at about 9 p.m. when rescue operations were believed completed. The discharge tube was laid out but due to the position of the pumper, ladders and other equipment—and the proximity of high voltage power cables—it was decided not to try to introduce foam through the back windows. By this time, smoke was so dense in the alley that it was difficult to remain there. The smoke seemed to have little or no heat and hung close to the ground.

It was decided to use the generator to ventilate the area. The 42-inch fan on this unit is capable of moving in excess of 30,000 cfm of air under these conditions. The discharge tube was disconnected about 30 feet from the generator and the section of tube which remained connected was used to direct the air current along the side of the building. This effectively cleared the smoke from the alley and allowed the fire fighters to remain there.

Foam controls fire

Shortly after 11 p.m., the larger foam generator, a 45,000-cfm, trailer-mounted unit, with a 5-foot-diameter fan, which had been brought to the scene by a tow truck, was put in operation at the front of the building. Before the high-expansion foam was injected into the building, all men on ladders at the rear of the building and all hose streams were backed out. The foam generator was operated for five minutes, filling the building to the third floor, with some flowing out the windows into the alley. Smoke was reduced to a negligible nuisance.

An inspection of the first floor from the front door showed that the floor had collapsed into the basement, and that there was still fire in spots inaccessible to the foam. An inspection of the second floor revealed no fire there. In fact, it was clear that the fire had never extended beyond the basement. It was decided to keep the building filled with foam to extinguish the remaining pockets of fire. This was done by operating the smaller generator a number of times during the night.

During the early morning hours of October 20, the foam was cleared and the fan from the smaller generator was used to ventilate the building. Small fires remaining beneath the collapsed floor and beneath the stairwell in the center of the building were extinguished with 1½-inch hose streams.

Chief Hutchinson's analysis

Chief Hutchinson later said that the problem was "like fighting two fires at once. The store is in the middle of the block, and it's a long, narrow building. No one in front of the store knew what was going on in back, and vice versa." The chief said that the foam controlled the fire. "After a few minutes of foam, all it took was two 1½-inch lines to put out a few small fires in hard-to-get-at places. We poured 1,000 gpm of fog into the building for two hours and got nowhere. After five minutes of foam, the smoke was gone and we had our men in the building. Before that, we couldn't get near the place. In fact, the men couldn't stand the smoke in the alley. Without the foam unit we'd have had to evacuate the area."

Chief Hutchinson was overcome by the dense smoke while rescuing some of the 11 persons brought out of the air-conditioning room. He fell from the ladder and one of the persons saved fell on him. Firemen hustled the chief into an ambulance, but he revived before reaching the hospital and insisted on returning. He later said that because of his absence and the preoccupation with rescue efforts, foam was not used sooner. "If I had to do it over again," he said, "we'd have had foam in there in 10 minutes. We couldn't touch the fire in the rear of the basement with water." □□

The tail section of the Electra was the largest piece remaining of the aircraft which crashed on September 17. It was thought that there might possibly be life left within it. However, a search revealed that no one had survived the impact

All photos Official Chicago F. D. photographs

Chicago Suburbs sustain two aircraft crashes during September

By NEAL CALLAHAN
Chicago Fire Department

AIRCRAFT DISASTER struck the Chicago area twice during the month of September. On both occasions the combined efforts of Chicagoland fire departments won praise from newspapers, radio, television, public officials and the public itself for the splendid manner in which they handled these emergency situations. The suburban fire departments acted quickly and efficiently in combatting the fires and made gallant efforts to save those involved in these accidents.

The first crash, on September 1, 1961, involved a Trans World Airways four-engine Constellation which had taken off from Chicago's Midway airport bound for the west coast. Four minutes after it left the runway, it crashed in flames in a corn field in Clarendon Hills, a few miles west of Chicago. Within minutes, fire departments from all over the area were responding to the scene of the crash. Chicago was called and asked to send ambulances and lighting equipment. As it turned out, none of the ambulances was needed as all 73 passengers aboard the plane and its crew of five died. However, within minutes of the actual crash, the fire was extinguished by the suburban fire companies. One Chicago chief remarked there was enough equipment there to put out at least three 5-11's in Chicago.

The second crash came on Sunday, September 17. A four-engine jet-prop Electra of Northwest Airlines left the runway at O'Hare International Airport bound for Florida with 37 persons aboard. Seconds after it lifted off the runway, the plane began a turn to the right. However, the turn became steeper and the aircraft began to lose altitude. It continued down, the turn reaching the point where the ship was flying sideways and the tip of the right wing struck the tracks of the Chicago Northwestern Railroad. This flipped the plane completely around in a circle and it crashed into a muddy field.

At this exact time, Chicago Fireman Earl Rogge, assigned to Engine Company No. 10 stationed at O'Hare Field, was driving his car toward the crash scene. He had gone off duty at 8:00 a.m. and was on his way toward a friend's home near the airport. Rogge

Fire fighters and rescue workers search Electra tail section for bodies following extinguishment of flames. First fire fighting efforts were directed to this area, but explosion thwarted all hope of rescue

saw a great flash, followed by a ball of heavy black smoke filled with a rolling flame shooting skyward about a mile ahead of him. He didn't think about a possible plane crash, but stepped on the gas and hurried to the scene. He said, "I could not see just what was burning because of the homes and the trees, but then all of a sudden, I saw a tail section sticking up in the fire." He jumped from his car and was running toward the burning tail section when a pumper from the Bensenville Fire Department arrived.

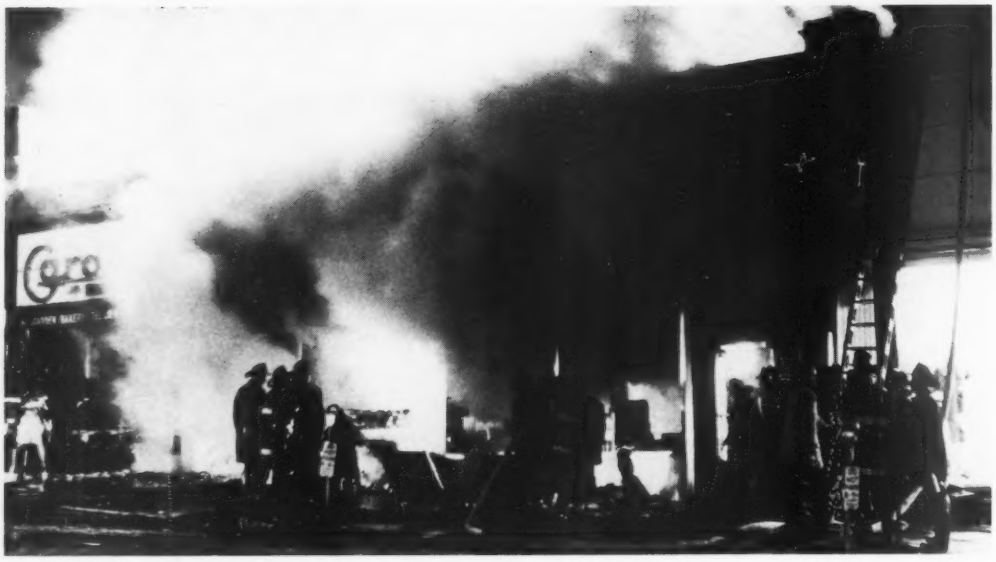
Rogge, trained in aircraft fire fighting said, "These men were magnificent. They drove right up to the tail, pulled off two lines and had water on the section almost immediately." While the water was being directed on the tail, one of the Bensenville fire fighters radioed for help. At this point, the tail section was completely intact for some 30 feet forward. Windows were still unbroken and the firemen, thinking that some persons might still be alive, concentrated water on this section.

At this time, another pumper from Bensenville arrived and moved right to the scene. The company pulled off its two lines and concentrated on the cabin of the downed airliner. Then an explosion rocked the tail section and blew it apart, sending white-hot flames roaring through it. The Bensenville men, though stunned by the explosion, never backed up an inch.

Continued on page 1099

Center right: Equipment stationed at O'Hare International Airport at scene of crash. The Cardox unit is spraying the tail section. The rest of ship lay in thousands of pieces over an area some 1,000 yards long and better than 50 yards wide

Lower right: Monsignor William J. Gorman (center) administers Last Rites to victims of the crash with the assistance of a member of the United States Air Force and a fellow fire fighter. Father Gorman, a member of the Chicago Fire Department for nearly 40 years, was assisted by many other members of the clergy who rushed to the crash scene



New York firemen battled four-alarm Bronx supermarket fire on November 9. Blaze started in cellar, worked up to the roof and eventually extended into five other business establishments before being brought under control

HOW TO INSPECT SUPERMARKETS

By CHIEF EMANUEL FRIED
Hinsdale, Ill., Fire Department

This is the third and final installment of a series devoted to fire protection problems of supermarkets. The author calls attention to many important points which must be kept in mind when inspecting such occupancies. No attempt is made to offer solutions to all possible deficiencies, and the reader is urged to refer to local building and fire prevention codes for applicable regulations.

—The Editors

INSPECTIONS of any building may be made for the purpose of discovering violations of law or regulation, or for safeguarding lives in the event of emergency. The intent of this article is to call attention to conditions which frequently exist in supermarkets in order that fire officials having jurisdiction may eliminate or minimize them. In this manner, fire may be prevented and the danger to the lives of employees and customers may be lessened.

In order to intelligently discuss the problem of supermarket inspections, attention is called to Tables 1, 2 and 3. These provide guidance to all inspecting personnel and point out the causes, area of origin and recurrent factors which have contributed to the history of supermarket fires. This knowledge coupled with standard fire inspection procedures should result in better over-all understanding for the fire department and increased safety for the community.

Inspection mechanics

Start outside the building. If the store is a separate unit, examine all exterior faces and the roof. If it is part of a group, note the front, rear, roof and nature of occupancy and construction of stores on each side. During the inspection, keep in mind the exposure hazards. Determine and record which other buildings will be exposed should a serious fire occur. While most modern markets are one-story structures, some of the older stores are two-story, with either dwellings or other stores above. Where such is the case the occupancies above must figure in your inspection.

The roof is an important part of your inspection. Often there is no ready access to it via the interior. Here is where the company method of inspecting buildings is advantageous in that a ladder from the apparatus will be available. Other than that, try and borrow a ladder from the store.

Front of store

Consider traffic congestion and determine width of streets and presence of one-way streets. It is possible that apparatus may be blocked moving in to fire during the time of day when congestion is serious. Find out the hours this is at its peak.

Note locations of hydrants, main size, and number and size of outlets. Frequently they are so located that they may be blocked by cars or delivery trucks or subject to being broken off by trucks. Find out how much water is available from hydrants for fire fighting. It may be necessary to request the water department to make flow tests, install additional hydrants and put up protective guards to prevent damage by vehicles.

Distance of the store from the street may require apparatus responding to this area to carry additional hose, unless hydrants are located in parking lot area.

Where sprinklers or standpipes are installed, check the siamese (outside fire department connection) for clapper valves. Where there are two such connections, one for sprinkler and one for standpipe, each should be color-coded to insure that supply lines feed

the correct appliance. Note, in particular, where cellars are involved, that if the outside fire department connection supplies only a cellar sprinkler, it be marked and coded. A standard color coding is red for standpipes, green for sprinkler and aluminum for cellar sprinkler connection only.

Note overhead electric wires and determine if there is any danger of their being hit by ladders or exposed in case of fire. Determine the voltage being supplied.

Look for large hanging or projecting signs on unprotected metal supports which may be exposed to fire. If a sign is anchored into the store wall, it may collapse and tend to pull part of the wall with it.

Determine if apparatus can get into parking area readily and maneuver easily. Parked cars may prevent apparatus approach. Note if any hydrants are located in parking area and if they are blocked.

Most new stores are built without cellars. If store does have a cellar, check for outside entrance and its location.

Front show windows may be piled halfway to the ceiling with goods on inside ledge. This provides combustible storage right up to windows alongside of exits. In case of fire and window breakage, such storage may fall partially in and partially out of store directly in front of show windows. This may hinder rescue attempts, block fire operations, cause men to stumble, etc. The cooperation of the store manager must be sought to eliminate this storage. A little diplomacy here will gain you more than a direct order to remove. It is doubtful whether you can legally enforce restriction on the storage of goods on the inside ledge of such show windows.

Note particularly the location and type of entrance and exit doors and whether these operate manually or automatically. It may be found that one door opens outward and the door alongside opens in. This arrangement is common in modern supermarkets and constitutes a major hazard.

Rear of store

Check siamese connections, outside cellar entrance, overhead electric wires and parking area. Usually rear doors are only for receipt of goods. Note their location, whether they swing in or out, and whether hinges are exposed. Determine how the doors are fastened when store is closed. From this knowledge it is possible to determine the best method of forcible entry should the need arise.

Usually there are two small windows for toilets, generally barred from the inside. If not barred, they may be an easy way to gain entrance. Most likely, little benefit will be gained from breaking for ventilation purposes, because the toilet door will be closed to the body of store. If store has a cellar, then cellar windows will be at rear and sometimes also at sides. Note this for purposes of ventilation in case of cellar fire.

The wall construction may be brick, cinder block, concrete block and often cinder block with a brick veneer. If it is block construction and there is a serious fire on the interior, it may be feasible to breech the block wall to gain entrance for rescue purposes or to advance lines. It may be far easier to do this than to force a heavy steel door, well barred from the inside. If the department has an acetylene cutting outfit, then it is easier to cut the door. It should be realized when cutting with a torch that operation must be carried on until the door is opened. Otherwise you may ignite combustibles on the other side of the door and cause a second fire.

Louvered ventilators may be as large as 8 feet square. Do not assume this to be an easy way to force entrance to store. Such louvers most probably provide ventilation for refrigeration machinery room and there may be large stationary fans mounted behind the louvers. Serious injury to personnel may result if fans start while attempting to force louvers.

If the market is part of a group of stores in a row, then it is important to check upon the occupancy (high or low hazard) of adjoining stores particularly the construction of side walls and roofs.

Roof of store (separate store)

Determine if roof can be opened readily. Note skylights and any wood sheathing. Note if there is a hanging ceiling and the kind of roof supports. Determine if there is access to the roof from inside store. In addition, note height from street, obstructions on roof (signs, etc.), and the possibility that if the fire goes through roof it may expose other buildings.

Most likely the roof will be of the truss type because of great interior span. It is particularly important to determine the construction and materials used. Air-conditioning machinery is often located on the roof and in case of collapse it may crash through on members operating inside store.

If stores adjoin the market, determine if dividing wall between it and other occupancies is a common party wall. If so, it should continue up through the roof ending in a parapet. This makes a good fire stop. Where dividing wall is not parapeted, or simply ends at ceiling level, then fire entering hanging ceiling may expose entire roof and all stores.

In order to avoid the appearance of flat or truss roofs, or to conform with the architecture of the area, some stores have false roof gables at the front and sides. The problem is that if the common dividing wall extends through the roof ending in a parapet, does this parapet continue on through the part where the false gable meet

Continued on page 1101

Table 1—Causes*

Smoking and matches	15
Refrigeration equipment defects	14
Electric wiring faults	7
Electrical appliances defective	7
Incendiary	6
Defective heating equipment	5
Defective incinerators or flues	5
Gas leaks and appliance defects	2
Sparks from rubbish outside	2
Miscellaneous known causes	5
Unknown	32
	100

* *Statistics of 100 fires based on NFPA "Occupancy Record of Supermarket Fires"*

Table 2—Origin

Service area		78
Stockroom	24	
Refrigeration equipment room	15	
Incinerator	4	
Boiler or furnace room	3	
Office	3	
Other	8	
Unknown	21	
Sales area		11
Attic		5
Exposure		4
Unknown		2
Total		100

Table 3—Recurrent Factors Contributing to 43 Large Fires

Lack of automatic sprinklers	38
Lack of automatic detection equipment	35
No fire walls between sales and service areas	32
Lack of watchman	31
Attic, undivided	18
Combustible fibreboard	14
Poor storage practices	6
Poor water supplies	5
Blank walls	4
Delayed alarm	4
Open stairways	4
Rubbish accumulation	4

Jonesboro, La., suffers largest single fire loss in its history

By CHIEF MAURICE NEWTON

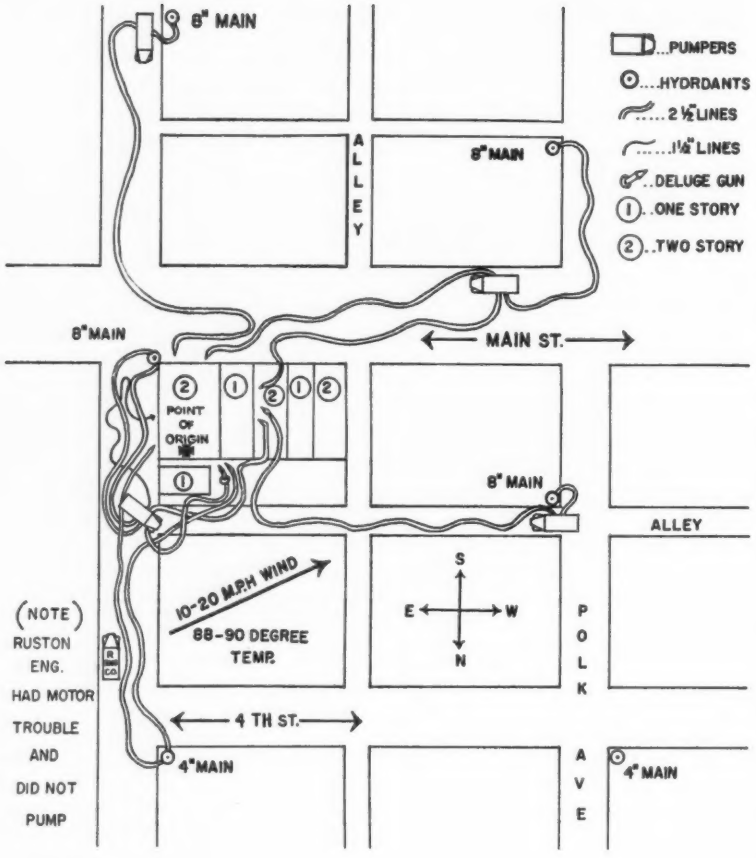
Jonesboro, La., Volunteer Fire Department

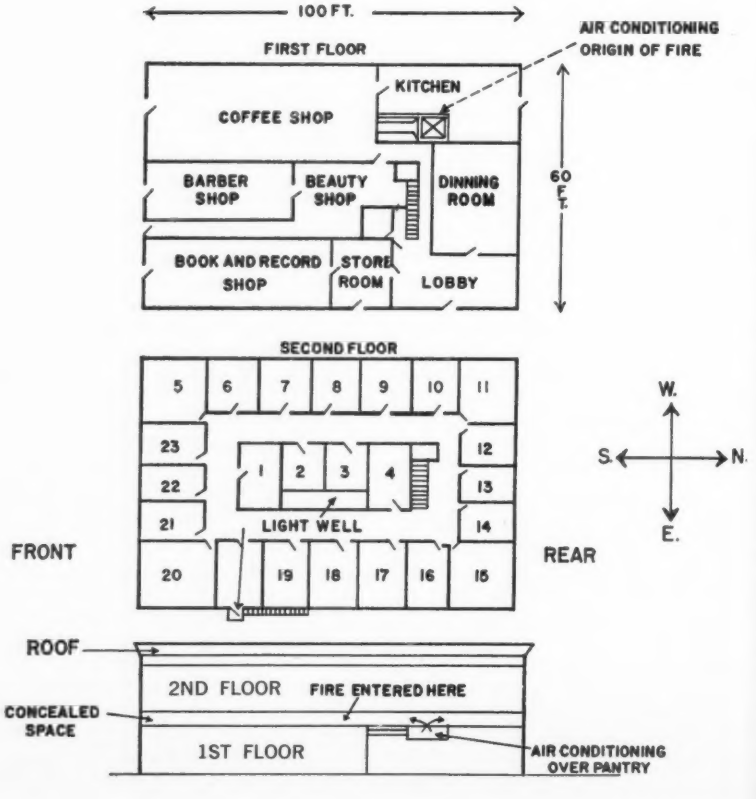
CONCEALED SPACES and other faults in a 35-year-old building contributed to the eventual destruction by fire of the Jonesboro Hotel and several other occupancies on Sunday, July 9.

About 2:50 p.m., Willie Pedron, standing in the city power plant about 100 feet from the rear of the hotel building, thought he saw smoke coming from the coffee shop. He walked across an alley to the hotel and noted that the kitchen was full of thick gray-black smoke, but could see no fire. He then ran back to the power plant and turned in the fire alarm.

Engine No. 2 was first-in and immediately stretched in a 2½-inch feeder line. Two preconnected 1½-inch lines with fog nozzles were led in, one to the rear door of the kitchen, and one into the hotel lobby. Engine No. 1 arrived and was ordered to stretch a 2½-inch line to the rear of the building and connect to the hydrant at the other end of the alley on Polk Avenue.

Smoke was very thick, but no fire could be seen. A search was made in the kitchen, lobby, cafe, and the corridor upstairs in an effort to locate the fire. After three or four minutes, fire was located around the air-conditioning unit for the hotel cafe which was above the kitchen pantry. A 12-foot roof ladder was brought in and the 1½-inch line advanced to this point. The fire around the air conditioner was knocked down, but the fireman on the ladder warned that the flames had entered a small hole in the ceiling and were now up in a 2 or 3-foot concealed space that ran the length and





width of the whole building, and were rolling.

At the same time, other firemen had found fire in the boiler room on the ground floor, located across a passageway and one room from the kitchen. The other 1½-inch line had been taken up the fire escape at the other end of the building and the 2½-inch line off Engine No. 1 was too short to reach this fire. A 2½-inch line off Engine No. 2 was ordered led in to this fire and another 2½-inch feeder stretched back to the hydrant on the corner of Main and Hudson Avenue.

Aid request sent

A request for aid was sent to the Hodge, La., Fire Department, 2 miles north of Jonesboro. On arrival, they were ordered to stretch a 2½-inch line to the front, or south end, of the building and take the hydrant on the corner of 6th Street and Hudson Avenue. At about 3:15 p.m., the Winnfield Fire Department, 24 miles south of Jonesboro, and the Ruston Fire Department, 25 miles north, were alerted to stand by for a call for aid.

An attempt was made to go to the second-floor corridor and chop a hole in the floor so a stream could be used in an effort to head the fire off and to keep it from spreading to the front or south end of the building. Before this could be carried out, firemen on the second floor reported the fire had already entered and fully involved the first room to the right of the stairs. It was roaring out the vent at the top of the door. Another 1½-inch line was advanced to this fire, but it had no effect.

In a few minutes, two more rooms down the hall were on fire, and another at the rear of the building. The heat had become unbearable for firemen working on the second floor, and despite all efforts, the fire increased in intensity.

At about 3:25 p.m., the Winnfield and Ruston Fire Departments were requested to send aid. Anticipating an early collapse due to the type of construction, all inside fire fighting was abandoned and personnel were ordered out of the building.

With a 10 to 20-mph wind from the northeast, and only 30 feet separating the fire building from the two-story structure on the windward or west side (a fire wall separated the adjoining one-story building), an all-out effort was made to keep the fire confined to the building of origin. After all personnel had retired, Jonesboro Engine No. 2 broke its two short 1½-inch lines and made one long line to the southeast corner; moved the 2½-inch line to the roof of the two-story building to the west, and led in another 2½-inch line to a deluge gun nozzle at the rear, northwest of the building. Jonesboro Engine No. 1 moved their 2½-inch line to the roof of the two-story building on the west. Hodge Engine Company left its line in front, south of the building. The fire was beginning to vent itself through the roof when Winnfield Engine No. 2 rolled in. This company was assigned the hydrant just south of Main Street in the alley on Polk Avenue. They stretched in a 2½-inch feeder and led off their engine with 2½-inch lines, one to the ground in front of the burning and one to the roof of the two-story building on the west. As the Winnfield firemen were getting water on the fire, Ruston Engine Company rolled in. This company was assigned the hydrant on the corner of 4th Street and Hudson Avenue. Unfortunately, they had to run direct hydrant lines because their engine developed motor trouble and could not pump. Two 2½-inch lines were led in from the hydrant by Ruston, one to the rear at the north end, and one to the east side of the building. The fire was covered on all sides but the brisk wind from the northeast made it very difficult for the firemen on the two-story building on the west and those on the ground in front to the south. Most of these men received slight burns from the intensity of the radiant heat. The men on the windward side, plus the fire wall between the burning building and the adjoining structure, were the key factors in keeping the fire in the building of origin.

Fire declared under control

The fire was declared under control about 5:35 p.m., two hours and 40 minutes after the first alarm. Companies returned to quarters in the following order: Ruston, their motor trouble fixed; Winnfield; Jonesboro Engine No. 1; and Hodge. At about 8:00 p.m., Jonesboro Engine No. 2 was returned to quarters, leaving two 1½-inch and one 2½-inch lines from the hydrant on the corner of Main and Hudson Avenue to be used as watch lines. These were manned for the next 48 hours and left as stand-by lines until Thursday, July 13, when the fire was declared out.

Five pumpers, nine hose streams, 5,100 feet of 2½-inch hose and 400 feet of 1½-inch hose were used by 46 firemen in about a two-hour period to control this fire.

Losses to the four firms in the fire building, plus smoke damage to the adjoining dry goods store, made the damage run from $140,000 to $150,000, the largest single fire loss this town has ever suffered. About $128,000 was covered by insurance.

As a result of lessons learned at this blaze, town and fire department officials are now working on codes and ordinances to correct the deficiencies in present and future buildings. A paid fire inspector has been hired to do fire prevention work.

In addition, planned mutual aid controlled by two-way radio was proven to our satisfaction as a "must" for small towns. The operation described here was very smooth, with incoming fire companies knowing in advance of arrival their assigned positions. As a result, little or no time was lost in hooking up and advancing lines to the scene. □□

Charlotte Revives Rank of Lieutenant

A change in the chain of command has been inaugurated by the Charlotte, N. C., Fire Department, Chief Donald S. Charles. After a disuse of over 25 years, the rank of lieutenant has been revived.

The rank will be assumed by men in all companies who have heretofore held the rank of "acting officer." The change has been made in accordance with National Board of Fire Underwriters recommendations, to avoid possible confusion on the fire ground. The new lieutenants only assume command in the absence, for any cause, of the captain.

In Charlotte, each platoon of an engine or ladder company is normally in command of a captain. The new arrangements will make little change in a company, except that the authority of the "next in command" is more clearly stated and recognized.

Eugene Short

Rescue Boat Service to Be Discontinued

The Lakewood, N. Y., Fire Department, which has operated a rescue boat service on Chautauqua Lake for nearly 20 years, announced cessation of service as of October 15. The decision to discontinue the activity and sell the present boat was prompted by a lack of finances and interest.

The Booster Line

Paterson fire fighters employ portable turret nozzle on Dillistin Lumber Co. blaze. Severity of fire caused first activation of Passaic County Mutual Aid Plan. Seven neighboring companies covered in case of additional fires—*Photo by Zito Studios*

Series of ARSON fires cause heavy loss in Paterson, N. J.

By CAPTAIN WILLIAM J. COMER
Paterson, N. J., Fire Department

JUVENILE FIRE SETTING recently plagued the Paterson, N. J., Fire Department, with damages totaling about $500,000 before a suspect was apprehended. Upon questioning, a 16-year-old auxiliary fireman confessed setting the nine blazes. The youth, who lived only a block from the quarters of Engine Company 10, told police he started the fires to prove that "Paterson has a good fire department."

The series of fires began on June 12, with a small one which was extinguished with slight damage to a chemical warehouse on East 30th Street. A second fire, which also caused only slight damage, occurred in the Paterson Crystal Salt Company, 109 - 19th Avenue, on June 13.

The youth is alleged to have set a fire in a large warehouse of the Dillistin Lumber Company on 18th Avenue on June 18. This blaze resulted in the sounding of a general alarm, calling all of Paterson's 17 companies, and a recall of all off-duty firemen. In addition, Chief of Department Harold Kane requested mutual aid, and companies from seven neighboring cities responded to Paterson to cover in case of other fires. Three additional blazes broke out during the emergency.

The warehouse was destroyed as well as four trucks parked inside and 10 automobiles and several garages across the street on the East 29th Street side of the building. Damage from this fire alone amounted to $250,000, but considering the exposures, the fire department did a good job by keeping it from spreading to the main lumber yard across the street and to scores of adjacent homes.

Additional fires attributed to the youth included one on June 19, which destroyed a shed at 208 - 19th Avenue, and a warehouse owned by the Paterson Crystal Salt Company and Fleetwood Flooring Company at East 30th Street and 19th Avenue on July 1. The three-alarm fire that ensued caused heavy damage, and several firemen were overcome by the smoke.

The youth also is alleged to have set a fire on July 3 and set fire to a coal storage yard at 776 East 26th Street on July 5. The latter resulted in considerable work for the department and necessitated a second alarm. There had been two previous fires at this location.

The first break in the case came when a watchman employed by the International Truck Company of 128-19th Avenue reported July 3 that he had seen a boy starting a brush fire nearby. The lad ran when the watchman approached. A youth who answered the description was brought to police headquarters, but was released when the watchman failed to positively identify him.

On July 3 a rubbish fire was started in the hallway of a two-story house at 514 Park Avenue. This was minor and was not reported to the fire department until July 8. When this fire was investigated, a partly burned supermarket shopping guide was found in the debris. This proved to be an important clue. These guides are mailed to homes in the Eastside section where all of the fires occurred, and an address was still visible on the one found at the fire. It corresponded to the home of the youth previously questioned.

After further questioning by detectives, and confronted with the facts, he broke down and sobbingly confessed. A charge of setting the fires was made against him and disposition of the case turned over to the Juvenile Court.

The suspect's identity stunned the firemen of Engine No. 10. "He was the nicest kid that came around here," one of them remarked. "He was quiet and reserved and always wanted to help." He often went on errands for the firemen and his ambition was to become one. However, he had evidently lied about his age when he joined the auxiliary, for a person must be 18 to join the civilian defense auxiliary fire department. He attended all the fires he set, and even rode with Engine Company 10 to the fires at Dillistin Lumber Company and Paterson Crystal Salt Company.

In the past the fire department has had nothing to do with the recruiting of auxiliaries, which was done through the local civilian defense agency. As a result of these fires, Chief Kane pressed for a more thorough investigation of applicants and members of the auxiliary fire department. □□

Montana Volunteers assist at Sleeping Child Forest fire

Towering over the mammoth 31,000-acre forest fire is white-topped thermal cloud, formed when the hot rising gases got up to frigid levels and condensed. The clouds could be seen for 25 miles

By STAN HEALY

FIREMEN from Hamilton, Darby and Sula, all western Montana communities at the head of the Bitter Root Valley, left their stations for several days a few months ago as the mammoth Sleeping Child Forest fire thundered through 31,000 acres of woodland. The blaze rampaged for two weeks in the middle part of August, growing to a 30-mile perimeter despite the efforts of 1,700 men to stop it. Finally rains turned the tide, but only after two men paid with their lives.

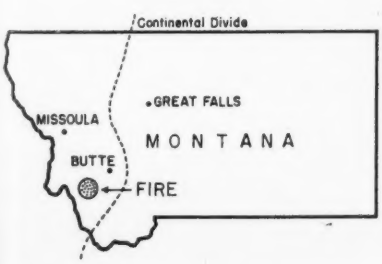
Scene of the fire was the Bitter Root National Forest, about 85 air miles southeast of Missoula, and 15 or 20 miles from Sula, Darby and Hamilton. Burning the hottest was the south perimeter where raging hot gases, swept upward, formed a "thermal cloud" that hovered over the fire every day. As the moist gases rose to high levels, they condensed and formed a big white mushroom cloud. Under this cloud, forestry and town fire fighters, mostly volunteers, with machines, fought a desperate battle until the elements came to their aid.

The ranchers settled in this area are still expressing their gratitude to the firemen who came to assist them in their time of need. □□

Darby firemen set up their front-mount pumper along East Fork of Bitter Root River. South edge of fire was 4½ miles away and heavy smoke filled the canyon

Hamilton and Sula equipment at tinder-dry Fred Wetzsteon ranch. Smoke obscures mountains in the background. Flames were about 4½ miles to left of this photo

All photos by Stan Healy



Head and floor tables at annual banquet. The more than 765 persons attending the gala closing function witnessed the installation of officers and some excellent entertainment

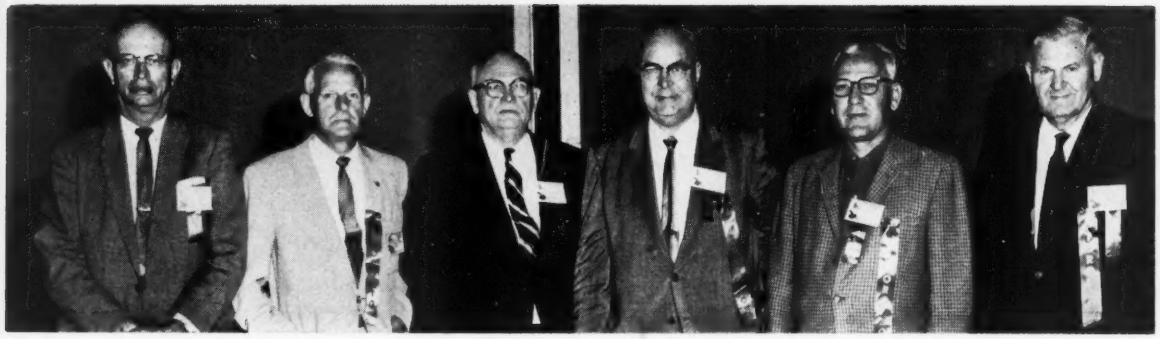
All photos by Edward J. Allen Associates, Inc.—official conference photographer

Registration line in Convention Center lobby on opening day. More than 1,300 members and guests had registered by noon, and initial business session was heavily attended

Photographic highlights of the recent 88th

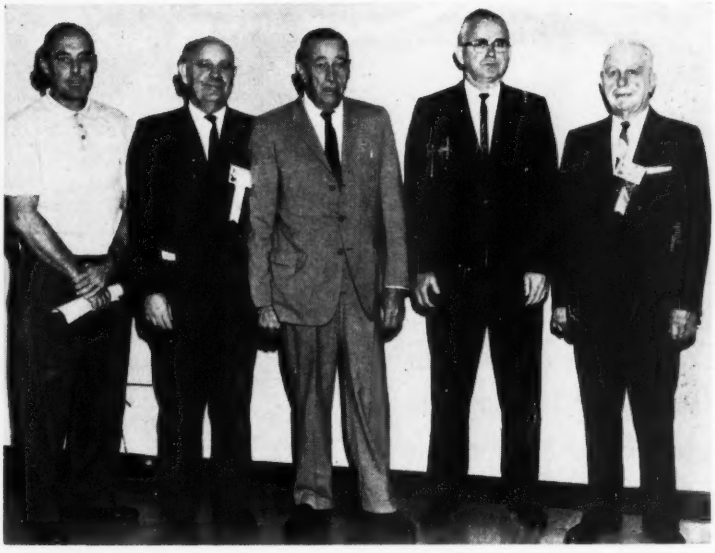
IAFC Conference at Las Vegas

Delegation representing the State of Hawaii provided entertainment at various luncheons and banquet to publicize Hawaii's successful bid for the 1963 Pacific Coast Inter-Mountain Division conference



Some of the IAFC past presidents attending were (left to right): Chief A. H. Lintleman, Baytown, Tex.; Retired Chief Gray Burnett, Ottawa, Ontario; Retired Chief Henry Thomas, Hartford, Conn.; Chief Reynold Malmquist, Minneapolis; Chief Wayne E. Swanson, Rockford, Ill.; and Chief Donald S. Charles, Charlotte, N. C.

President-Elect Edward Deignan, director of fire, Elizabeth, N. J., addresses opening session in Convention Center auditorium



Past presidents of the Pacific Coast Inter-Mountain Division, IAFC, in attendance were (left to right): Chief Keith Klinger, Los Angeles County F. D.; Chief William J. Taylor, Burbank, Calif., and immediate past president, IAFC; Retired Chief S. H. "Step" Edmondson, Pasadena, Calif.; Chief James J. Sweeney, Oakland, Calif.; Chief William Fitzgerald, Seattle, also a past president, IAFC

Panoramic view of exhibit hall. Manufacturers' displays broke all previous records to become largest in conference history

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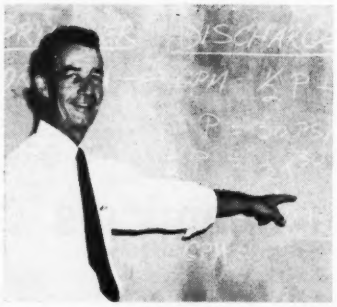
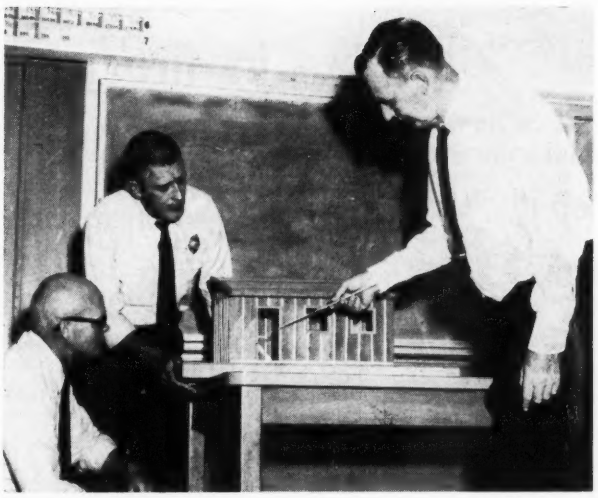
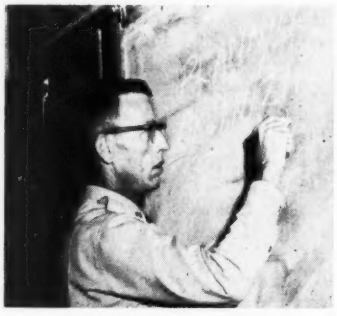


Battalion Chief Richard Severns illustrates a principle in Fire Hydraulics course he instructs at San Jose City College. Course forms part of the Associate in Arts fire training program offered fire fighters who wish to advance their education



Classroom models are used by Captain C. Shannon to illustrate techniques in his Fire Control Strategy course. Students are Firemen Green (left) and A. Noseworthy of the San Jose Fire Department



Captain Crabtree, Sunnyvale Department of Public Safety, outlines fundamental concepts during opening session of Elements of Supervision which is offered to fire fighting majors at the San Jose City College

San Jose City College offers degree program for fire fighters

AN EDUCATIONAL PROGRAM for fire fighters of Santa Clara County, Calif., has grown in four years from two courses, "Basic Fire Hydraulics" and "Fire Control Strategy," to an Associate in Arts degree program at San Jose City College, San Jose. This growth represents the cooperative efforts of the county's fire department and the San Jose Unified School District, working together through the Fire Training Advisory Committee. When the first two courses were offered four years ago, 200 firemen, almost half of those in the county, showed up for enrollment. It was this strong initial interest that gave impetus to the continued development of the program.

Because of the limitations of the 24-on and 24-off duty schedule, fire department personnel normally are unable to pursue regularly scheduled courses offered in the public schools. It was thus necessary in the beginning to make special schedule arrangements, which have made it possible for fire fighters to attend classes on their day off. Under this system, new courses have been added each year to allow students to continue their educational work at the college. To date, six special courses have been developed and taught and two others are in process to be offered next year. All of these courses, plus an additional five in the planning stage, provide course content related specifically to firemanship.

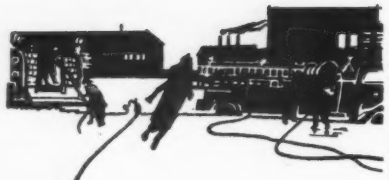
A Certificate in Firemanship may be awarded to those firemen who complete a selected number of fire training courses, but find it impractical to complete all requirements for graduation.

This educational program will eventually result in higher standards for fire fighters and better protection for the taxpayer. When combined with other factors, the course may be a force in lowering the National Board of Fire Underwriters' rating of some of the annexed, outlying areas. "In effect, stated Bruce Wiggins, Santa Clara County Fire Marshal, we are trying to elevate ourselves by our own bootstraps."

Young men seeking a career in the fire departments are also urged by the Fire Training Advisory Committee to enroll in the Associate in Arts degree program. Committee members point out that qualifying examinations for fire fighting positions contain many questions on the material covered in the program, thus giving college students majoring in firemanship a real advantage in gaining employment. Opportunities for advancement are also increased for those persons completing the college program.

Instructors for the various courses have been selected for their particular abilities and have come from different fire departments. Battalion Chief Severns, training officer of the Central Fire Department, has developed and taught the two courses in Fire Hydraulics. Captain Chris Shannon, training officer of the San Jose Fire

Continued on page 1114



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Recent developments in fire protection for dangerous chemicals

By DEPUTY CHIEF CHARLES W. BAHME*

MORE THAN 12 YEARS AGO an electroplating plant blew up in Los Angeles, killing 17 persons and leveling a city block. Helping to gather up fragments of bodies that morning, the author wondered if man would ever know enough about chemicals to adopt satisfactory regulations which would provide reasonable safeguards, not only for plant employees and the public, but also for firemen who may respond to such emergencies.

That explosion started the wheels moving, and the fire department was given the assignment to write a set of regulations for the city which would apply to all dangerous chemicals. We didn't realize how big a task it would be, but after three years of research, several rough drafts, and many public hearings, the Los Angeles Fire Department adopted a Dangerous Chemicals Code. This was probably the most comprehensive set of rules ever compiled in one book on this subject, and that was the trouble with it! It covered *too much* ground.

We had originally drafted it to cover only materials which we considered really dangerous; for example, those which were explosive, unstable, or violently reactive in the presence of light, air, heat, moisture, or shock. However, the building department urged that we include just about everything from castor oil to baled cotton in our list, and a table that started out with about 300 or 400 substances, ended up with over 2,000. The building department also inserted very detailed building requirements in Appendix A, and the code became so unwieldy it was necessary to keep your fingers in about five places at once to determine all rules which applied to a given situation.

Fire ordinance rewritten

Later on, the fire department did what was first intended, that is, rewrite the entire fire ordinance which had never been completely revised since its original adoption in 1916. Included in the new fire code, in a properly integrated manner, were provisions relating to corrosive liquids, oxidizers, explosives and other unstable substances, as well as flammable liquids, combustible fibers, flammable gases and similar materials which have always been covered by the fire laws. Thus, after several more years of study, writing, and public hearings (we started rewriting the code in 1953), it was finally put in a workable form and adopted a couple of years ago.

The writer no longer has charge of the dangerous chemicals detail and has not been assigned to the fire prevention bureau for years, but is still active in the NFPA Committee on Hazardous Chemicals. For about 10 years now it has been the hope that the committee would do something about revising the Table of Common Hazardous Chemicals which appears in the NFPA's "Handbook of Fire Protection." A draft for a total revision was submitted several years ago, but in a field as complex as this one, things move rather slowly. The committee *did* succeed in getting the column on fire fighting remarks revised some time ago, and is currently working on a larger revision, though not a complete one by any means.

Substances eliminated

A subcommittee met in December 1960 in New York and went through the old table, eliminating Borneol, Chinese wax, camphor, Colophony and several substances that are not really dangerous or which are practically unheard of today. But it didn't add a single one, such as ammonium nitrate, which blew up Texas City, or perchloric acid, which blew up in Los Angeles, or nitromethane, of which more than one tank car has blown up in recent times. Some of the chemicals which present the greatest danger are not proposed for immediate inclusion because it would take so

*The author is head of the Bureau of Personnel and Training, Los Angeles Fire Deparment. This article is condensed from an address presented at the Western Safety Congress, March 28, 1961.

long to route the proposed changes around to all interested parties for comments and objections that they would not be ready for adoption at the annual conference of the NFPA.

Instead, it was decided to start by eliminating the nonhazardous chemicals, and by changing the format to a listing instead of a table. The subcommittee also brought the information about these chemicals up to date, including the fire fighting methods and types of containers now being used. It is now called "Hazardous Chemicals Data," and as soon as possible, more chemicals will be added to the list. Each of the committee members has been asked to submit the names of chemicals which he believes should have priority for future listing, and possibly the data can be ready for insertion and approval at the 1962 annual meeting of the NFPA.

It is believed that we are making real progress in gathering and disseminating helpful information on the subject. At least, in the Los Angeles Fire Department, it is felt that we are making headway. We have conducted radiological training courses for our 70 chief officers and their aides since we realize that more than 6,700 businesses in the United States are handling these materials and that there have been about 450 incidents or explosions thus far involving radiological materials. A periodic review of the peacetime as well as wartime aspects of the subject is always valuable.

Pocket guide issued

One of the department's bureau of personnel and training projects was to issue a small pocket guide, which covers in condensed looseleaf form, for field use, the original 300 chemicals which we thought were really "dangerous." The guide covers, moreover, 100 general subjects ranging from concise procedures for handling acid spills to radioactive emergencies. We also have included in the appendix, pictures of the ICC labels, typical markings for portable compressed gas containers, a Table of Common Refrigerants, a Table of Common Fumigants, and a Table of Hazardous Chemicals which gives the properties concerning 300 chemicals in handy reference form. We have tried to include in the "Fire Officer's Guide" some abbreviated information from our previous book, "Fire Protection for Chemicals," which is currently being reprinted in its second edition.

Incidentally, the requests for the "Fire Officer's Guide," have been so numerous that our fire department gave the Fire Foundation, a nonprofit, educational and research organization,

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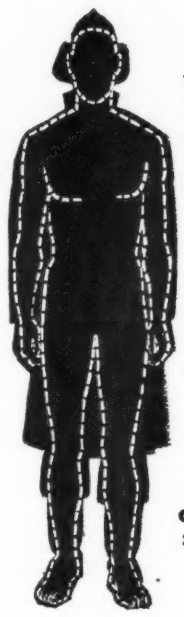

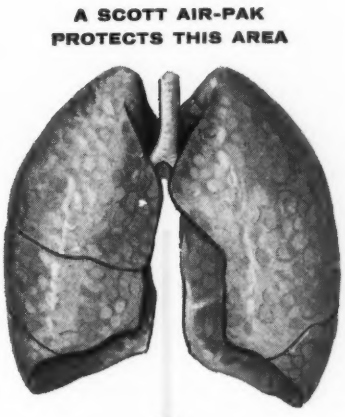

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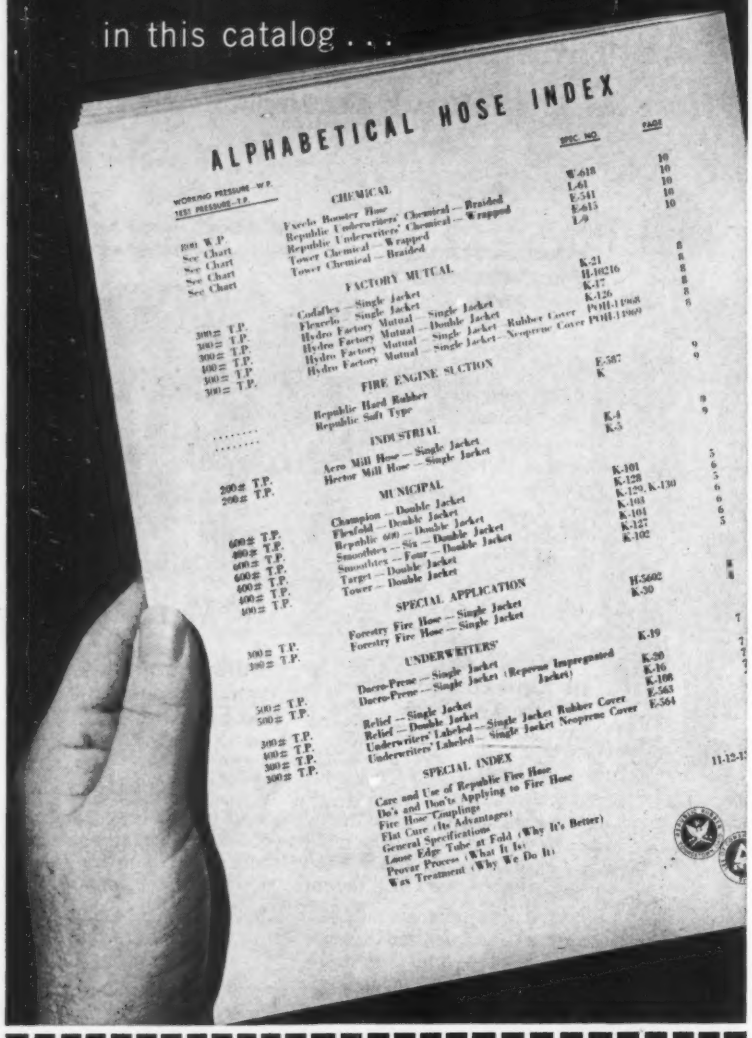

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the exclusive rights to reproduce it, and at the present time it is available from a Los Angeles publishing firm. Many departments throughout the country are obtaining copies to issue to their officers, as we have done in the Los Angeles Fire Department. Space has been left throughout the book to enter data which is applicable to individual commands, and whereby one can constantly keep it up to date.

We have placed a copy of Sax's "Dangerous Properties of Industrial Materials" at each of our four dispatching offices, for ready reference. Sometimes it is helpful in ascertaining an antidote for a particular chemical, although most of the inquiries received by our dispatchers relate to trade name compounds which can seldom be found in any of our publications.

There has been considerable improvement in the fire protection for dangerous chemicals in the past 10 years. It is true that many new substances of unstable and lethal character are continually being developed, but at least the fire service is no longer completely in the dark about the subject. With more knowledge, increased training and handy references, the fire protection officer today is in a much better position to recommend safeguards to persons who handle these substances. Equally important, he is in a much better position to successfully handle emergencies where these chemicals may be involved. □□

Oklahoma City Annexes More Territory

Oklahoma City, Okla., officially annexed 42.75 square miles of land on November 1, and thus became the largest city in area in the United States. Its area now totals 475.55 square miles, compared with Los Angeles' 457.95 square miles.

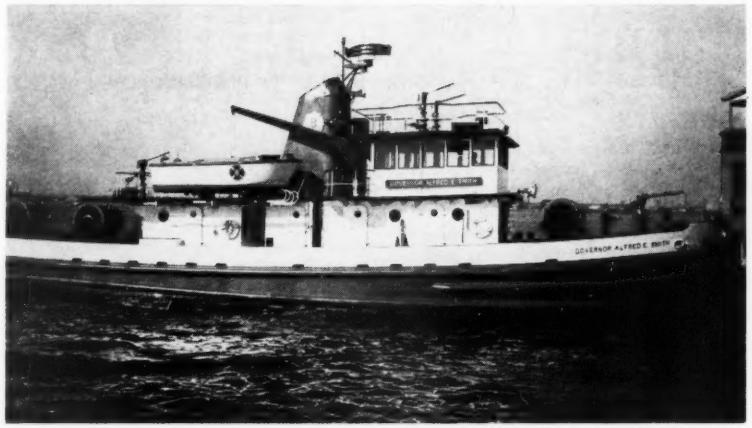
September Fire Losses

Estimated fire losses in the United States during September amounted to $76,976,000, the National Board of Fire Underwriters has reported.

This $76,976,000 loss represents a decrease of 5.9 per cent under losses of $81,845,000 reported for September 1960, and a decrease of 16 per cent under losses of $91,633,000 for August of this year, according to Lewis A. Vincent, NBFU's general manager.

Losses for the first nine months of 1961 now total $896,739,000, an increase of 8.2 per cent from the first nine months of 1960, when they amounted to $828,851,000.

These estimated losses include an allowance for uninsured and unreported losses.



Starboard view of New York Fireboat "Alfred E. Smith" shows jet auxiliary boat stowed in traveling position. Bow monitor is operated by electric remote control. Pilot house and stern monitors employ standard manual control—*Official New York FD photo*

"Al Smith" joins New York fireboat fleet

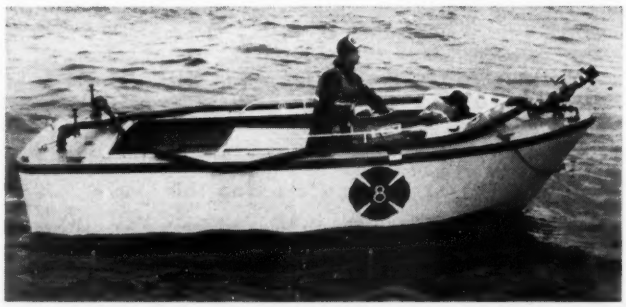
The "Governor Alfred E. Smith," latest acquisition of the Marine Division, FDNY, was placed in service on October 5. Built at a cost of some $907,000 in Camden, N. J., by Mathis Shipbuilding Co., it is nearly identical to the Fireboats Wagner, Wilkes and Archer.

Constructed with a welded steel hull, it displaces 292 tons, measures 105 feet, 6 inches over-all length, has a beam of 25 feet, 6 inches and a draft of 9 feet. Two Enterprise 500-hp diesel engines coupled to twin Wegner controllable-pitch propellers, give it a rated speed of 13 mph.

Two pumping engines, also 500-hp Enterprise, drive two Worthington pumps rated at a total capacity of 8,000 gpm. Safety features include Decca radar and Raytheon Fathometer installations.

A special feature of the new fireboat is the inclusion of an auxiliary fire-rescue craft on board to be launched as necessary. Built by Peterson Builders, Inc., Sturgeon Bay, Wis., with a welded aluminum hull measuring 20 feet in length overall, it has a 12-inch draft and an 8-foot beam. It is powered by a 200-hp Chrysler V-8 engine driving a Hanly Hydrojet propulsion unit and capable of speeds up to 23 mph with a rated pumping capacity of 600 gpm at 120 psi. A special valve permits maneuvering the craft while pumping at capacity.

Fire equipment includes a portable Akron Multiversal monitor, 400-feet of 2½-inch hose and miscellaneous items. Water may be supplied to the monitor nozzle through two discharge valves located at the stern. □□



Water-jet fire-rescue boat standing by. Draft of 12 inches and freeboard of less than three feet permits craft to maneuver in shallow water and under close pier clearance—*Photo by James Heffernan*

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False alarms

First pretty girl: "So you went skin-diving with a Scuba fireman. How did he behave?"

Second pretty girl: "A little rough around the sedges."

A boy was about to purchase a seat for a movie one afternoon. The box office woman asked: "Why aren't you at school?"

"Oh, it's all right, M'am," said the lad, "I've got the measles."

An actor confided to a pal, "I'm almost 65 years old, have saved half a million and have fallen madly in love with a dashing young blonde of 19. Do you think I'd have a better chance of marrying her if I told her I'm only 60?"

"I think you'd have a better chance to land her," said the pal frankly, "if you told her you're 80."

Golf, golf, always golf!" wailed the unhappy wife. "I think I'd drop dead if you ever spent one Sunday at home."

"Now, there's no use talking like that," her spouse replied. "You know you can't bribe me."

Judge: "You are charged with stealing $100,000 worth of fur coats. Have you anything to say?"

Prisoner: "I was chilly."

A football player was invited to a dance. Having been accepted by a pretty girl as a partner, it soon became evident he didn't know even one dance step. When the music finally stopped he bowed and said: "It was lovely, and I shall always remember it."

"I don't doubt it," answered the foot-sore girl. "Elephants never forget."

Female Logic

First Gal: "I wonder what those firemen think about when they are not out with us?"

Second Gal: "Probably the same things we think about."

First Gal: "Aren't they awful!"

Once a young man volunteered to help out at a dance for deaf and dumb people.

Once there, he was puzzled. "How do I ask a deaf and dumb girl to dance with me?" he asked.

"Just smile and bow to her," the director advised.

So he picked a pretty girl, smiled and bowed and away they danced. But he didn't know how to bid her farewell so they continued for three dances.

During the intermission, a man approached the girl and asked lovingly: "When are you going to dance with me, honey? It's been an hour since the last dance."

"I don't know, dear," said the girl sadly. "I don't know how to get away from this deaf and dumb idiot."

Farmer: "Let me tell you, my friend, that horse knows as much as I do.

Friend: "Well, don't tell anybody else; you might want to sell him someday.

A wiener is a horse that comes in first at Agua Caliente.

Sales Talk

One wolf to another: "Who was that cute little redhead I saw you outwit last night?"

Ontario Fire Fighters Quarterly

Intern: "What did you operate on the patient for?"

Surgeon: "Two hundred dollars."

Intern: "I mean, what did he have?"

Surgeon: "Two hundred dollars."

Sales Talk

Jones fell off his horse and broke his leg. The horse picked him up by the seat of his pants, threw him into the saddle, took him home, put him into bed and called a doctor.

"Smart horse," one of his friends said.

"Not so smart," replied Jones. "The darn fool called a horse doctor."

Viewpoint

A recent stock car race in Prague had only two entries, a Russian and an American. Though the latter won handily, the Iron Curtain reporter saved face for the Russian entry with the following account, published in a Prague newspaper: "The Soviet Moskvich ran superbly and placed second while the American ran next to last."

Mother: "Now, before you get serious with him, be sure that he is kindly."

Daughter: "Oh, mother, I'm sure he is. I heard him say that he had put his shirt on a horse that was scratched."

A person who thinks by the inch and talks by the yard, should be removed by the foot.

Top This One

Two volunteer firemen were lamenting about the dilapidated condition of the equipment in their respective companies.

"You think you have it bad," one related, "when we receive an alarm, we have to run down to Hertz and rent a truck."

W. D. Killen

What's new . . . among the manufacturers

products . processes . personalities

American LaFrance Announces Snorkel-Type Unit

American LaFrance, Elmira, N. Y., has introduced an improved aerial platform, commonly know as the "Snorkel," to its line of fire fighting apparatus. Called the "Strato-Chief," it will be available in either 70 or 90-foot working heights. It features two hydraulic articulated arms for elevation and 360-degree rotation. Mounted atop the truck, the unit will also incorporate conventional pumps, ground ladders and other fire fighting components, and is designed for fire stations with 10-foot door openings.

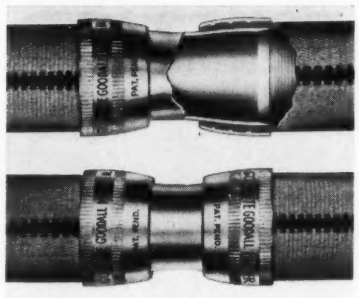
President Elmer A. Rich, III, said the equipment division of Young Spring and Wire Company, Bowling Green, Ohio, will build the aerial platform for installation on LaFrance apparatus. This latter company has been supplying Strato Tower aerial platforms for some years to the commercial market and has built four units for the Chicago Fire Department.

Improved Hose Cleaner

Bi-Lateral Fire Hose Co., 20 North Wacker Drive, Chicago 6, Ill., has announced a new formula for its Bi-Kleen hose cleaning compound. Claimed to be free of harsh alkalis, the detergent cleansing agent now contains a germicide said to destroy bacteria which causes mildew, rot and decay in fire hose.

Assumes Hydrojet Work

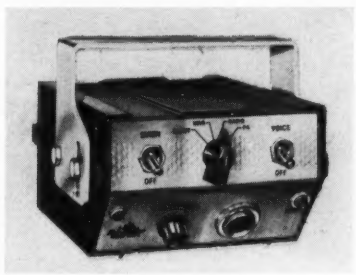
Hanley Hydrojet, Inc., Prospect, Ohio, has announced that all activities of the Hydrojet Marine Corp., Cleveland, Ohio, have been transferred to the Hanley plant. All facilities have been expanded to take care of increased operations.



New Fire Hose Mender

Goodall Rubber Company, Department M 4, Whitehead Road, Trenton 4, N. J., has introduced a Factory-Mutual-approved fire hose mender which is said to require no tools except a penknife to install. Designed to fit 1½-inch single-jacket lined hose or unlined linen hose having an outside diameter not exceeding 1¾ inches, it weighs approximately 5 ounces, and is made from a high-tensile anodized aluminum alloy which meets Military Specifications Type I.

Installation is claimed to be accomplished in one minute by hand and hydrostatic pressures up to 600-700 psi will not cause leakage or collapse of the unit.



New Penetrator Unit

The Fyr-Fyter Co., 221 Crane Street, Dayton 1, Ohio, is marketing a 75-watt Penetrator warning and communications system for emergency vehicles. Completely transistorized, the unit combines a siren, public address and radio amplifier system, together with what is said to be a new special emergency "alert" signal designed to attract instant public attention. It is available with or without microphone and a choice of speaker styles.

Paint Winners Announced

Empire Coatings and Chemical Co., 5631 Raritan Street, Denver 21, Colo., manufacturers of Hel/met fire-retardant paint, have announced the winners of the drawing held at the recent IAFC Conference in Las Vegas. Each of the following won a case of Hel/met interior household paint:

Chief G. F. Carley, Dalton, Neb.; Chief T. Daniels, Nucla, Colo.; Chief R. A. Davis, Wichita, Kans.; Chief Ray Dunn, Piedmont, Calif.; Chief R. P. Hill, Amarillo, Tex.; Chief A. Scrade, East Detroit, Mich.; Chief H. E. Simpson, Portland, Ore.; State Fire Marshal J. Coon, New Orleans, La.; Assistant State Fire Marshal H. E. Eames, Fairbanks, Alaska; Mrs. D. S. Charles, Charlotte, N. C.

New Fire Fighters Glove

Albro Fire Equipment Company of Los Angeles and San Francisco, Calif., has announced a new fireman's safety glove, made of high-heat reflective 3-M aluminized-asbestos fabric for the back and thumb, with a soft tanned elkskin palm and knitted wrist band.

Appointments and Promotions

George I. Schrank has been appointed manager of engineering, Industrial and Marine Division, Walter Kidde & Company, Inc., Belleville, N. J. He joined Kidde in 1952 and most recently served as chief design engineer, Industrial and Marine Division.

Vernon R. Haack has been appointed Dallas regional manager for the Industrial and Marine Division. He previously served as district sales manager at Kidde's Detroit regional office.

Please turn the page

MANUFACTURERS' NEWS

Continued from previous page

Richard A. Noelck, director of sales; **Robert R. Beattie,** executive vice president; and **William J. Carberry,** chief engineer, of Scott Aviation Corp., Lancaster, N. Y., have been elected to the board of directors.

Frank J. Demeter and **Edward G. Norris,** operating as Pacific S&S, Inc., San Francisco, Calif., have been named West Coast distributors of S&S professional cars by the Hess & Eisenhardt Company, Cincinnati, Ohio.

Great Lakes Coach Sales Co., 5280 Oakman Boulevard, Dearborn, Mich., has been named S&S professional car distributor in Michigan, with exception of the Upper Peninsula. Full service facilities will be maintained.

David R. Crandall has been named director, truck marketing, Dodge Trucks. In his new position, he will supervise truck merchandising, advertising, sales promotion and sales training activities.

Louis Schriber, formerly vice president, sales, has become vice president of operations, United States Motors Corporation.

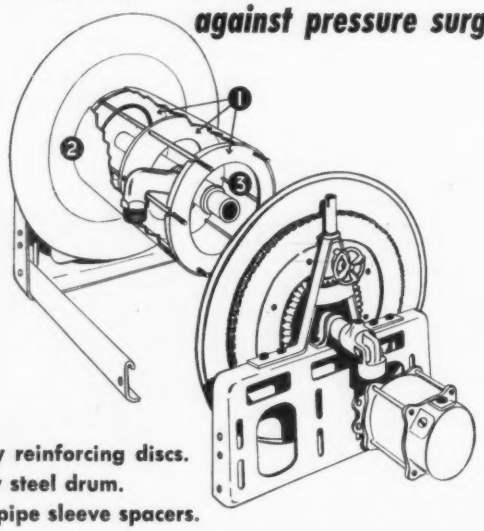
T. J. McGuire has been named vice president-marketing and **J. C. Christenson,** vice president-engineering. **Jay Finehout** has been named director, sales-engineering; **E. W. Zipprich,** service manager and **A. F. Barrett,** research and development manager.

Hubert A. (Hugh) Walker, author of many technical articles appearing in FIRE ENGINEERING, and familiar to fire chiefs and fire association personnel throughout the United States, has been appointed

assistant vice president, fire department apparatus and supplies, for American LaFrance, a Division of Sterling Precision Corp., Elmira, N.Y. Prior to this he was manager of sales engineering FDA. In his new position, he will concentrate on sales contact with fire departments.

Did You Know?

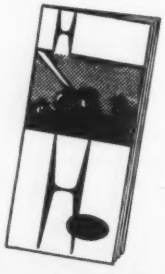
Hannay reels give you built-in protection against pressure surges.



1. Cast Tenzalloy reinforcing discs.
2. Welded heavy steel drum.
3. Tie rods with pipe sleeve spacers.

You're out of action at the fire when extreme pressure surges crush drums, spring discs or jam gears on the hose reel. To give you built-in protection against reel failure, Hannay engineers make pressure performance tests in the laboratory and in actual fire fighting service. You get these design and construction features only with reels designed and built by active fire fighters . . . reels by Hannay.

NEW guide to hose reel selection and data sheet on reels for CRL hose now available. Send for your copy today.



REELS BY HANNAY

CLIFFORD B. HANNAY & SON, INC., WESTERLO, N. Y.

New MSA Helmet

Mine Safety Appliances Co., Pittsburgh, Pa., has announced the Topgard, a new fireman's helmet injection-molded with polycarbonate, one of the new high-impact engineering thermoplastics. Claimed to combine the impact strength of metal and the natural resilience of plastic, it is designed in single-ridge construction to help deflect the force of a falling object. Helmet and shields are available in red, black and white.

New Camcone Plant

Camcone Products, Incorporated, has recently announced the expansion of their facilities and the acquisition of a new plant, at 55 DeLucca Place, San Rafael, Calif. They were previously located in Sausalito, Calif.

The new facility has over twice the

floor area of the previous plant and will allow a substantial production increase, eliminating back order delays. Also, new test and development facilities have been expanded to permit equipment demonstrations for visitors.

Publications Available

Champion Spark Plug Company, Toledo 1, Ohio, has published a 16-page booklet on ignition suppression for two-way-radio-equipped vehicles. Entitled "Giving Two-Way Radio Its Voice," it presents suppression techniques in terms a mechanic or fleet owner can understand and illustrates to the radio technician the importance and function of the ignition system and spark plugs. Marine engine suppression problems are included.

Ohio Chemical & Surgical Equipment Co., 1400 East Washington Avenue, Madison 10, Wis., has published several new two-color catalog sheets describing its E & J Emergikit, Mercury Mark I, Emergikart and Emergitruck resuscitators. Also included is a replacement parts and price list.

Notifier Corp., 3700 North 56th Street, Lincoln 4, Neb., has published a new two-color bulletin describing its Series MCN Control Panel. Ask for A-130.51.

Aeroil Products Co., Inc., 69 Wesley Street, South Hackensack, N. J., has issued a six-page, two-color brochure giving details on its line of space heaters, salamanders, LPG and oil-fired thawing torches, steam thawers and portable water heaters. Ask for Bulletin WE-1.

F D Products, 90-N1 Tracey Place, Englewood, N. J., will send free to any reader a plastic wallet-size 1962 Emergency First-Aid Calendar, which tells how to treat for the four most dangerous emergencies: Severe bleeding, breathing stopped, shock and poison. Send a self-addressed stamped envelope.

The C. G. Braxmar Co., Inc., 216 East 45th Street, New York 17, N.Y., has announced a new 48-page catalog of badges, insignia, jewelry for firemen, presentation trumpets, auto emblems and other specialty items. It is available on request.

Walter Kidde & Co., Inc., 675 Main Street, Belleville 9, N. J., is offering a 12-page booklet describing its line of extinguishers, smoke and fire detectors and carbon dioxide systems. Ask for brochure P-67.

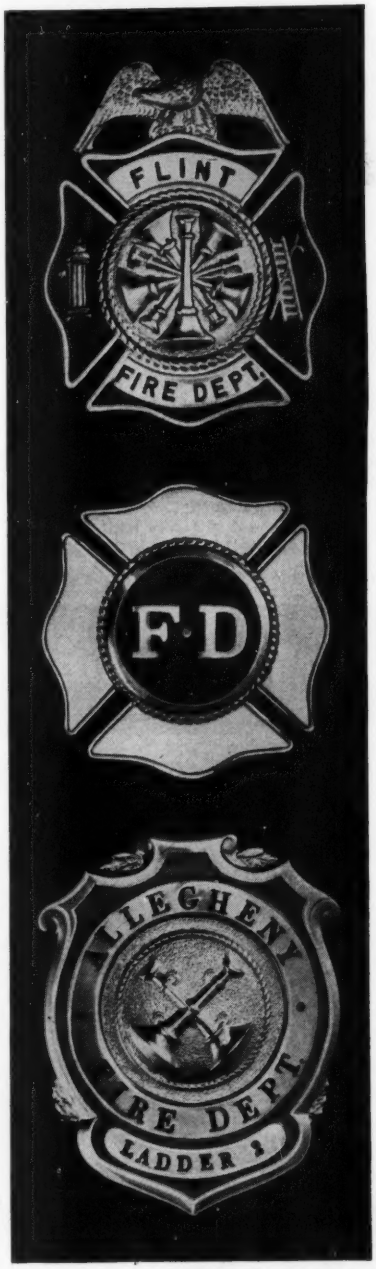
Exide Industrial Marketing Div., The Electric Storage Battery Co., Rising Sun and Adams Avenues, Philadelphia 20, Pa., has published an eight-page, two-color technical handbook on its line of automatic battery-powered emergency lighting equipment. Ask for "Exide Lightguard Technical Handbook."

The Roberts Co., Box 444A, Wayland, Mass., has published a new catalog de-

NEW! INSTANT IDENTIFICATION OF RANK & RESPONSIBILITY WITH

COLOR CODING

AN EXCLUSIVE BLACKINTON DEVELOPMENT FOR FIRE BADGES AND INSIGNIA



Color Coding, a new concept of badge design and utility, represents a remarkable method for essential split second recognition of rank and responsibility. Now with a wide choice of popular Blackinton Fire Badges and Insignia available in lasting permanent colorful enamel, it is possible to Color Code every man in your department by assigning individual colors for Chief, Rescue Service, Radiological Specialists, etc. Fundamentally practical for individual departments, Color Coding may also be expanded to provide immeasurable effectiveness for cooperative efforts of departments in a mutual aid pact.

These brilliant new badges and insignia are another contribution by Blackinton, the country's oldest and largest badge manufacturer. Ask your Blackinton representative about Color Coding and let him show you these handsome additions to America's finest Badge and Insignia line.

YOUR AUTHORIZED BLACKINTON UNIFORM AND EQUIPMENT SUPPLIER HAS COMPLETE DETAILS

NEW FULL COLOR CATALOG

Send today for this striking four-page, full color catalog of outstanding Blackinton enameled Fire Badges and Insignia.

YOUR BEST BADGE BUY

BLACKINTON

V. H. BLACKINTON & CO., INC. • ATTLEBORO FALLS, MASS.

scribing its line of fire service novelties, jewelry, fire marks, old-time apparatus prints and name signs.

General Electric Co., Communication Products Department, P. O. Box 4197, Lynchburg, Va., has published a 24-page brochure describing its line of two-way radios. Ask for ECR-904, "Two-Way Mobile Radios."

Portable Pneumatic Rescue Kit

Boston Clip and Tag Co., 48 Grove Street, Somerville 44, Mass., is marketing its new portable pneumatic rescue kit with an air supply interchangeable with any Scott Air-Pak cylinder. Tools supplied with the unit are said to provide metal cutting and shearing, masonry breaking and glass block smashing action for fast emergency forcible entry work. Also available is a special accessory ice-chipper for cutting openings in ponds, rivers, etc., for use of hard suction in winter drafting operations.

Koppers Dedicates New Research Center

The Koppers Company, Inc., dedicated its new research center in Somervell Park, Monroeville, Pa., near Pittsburgh, on August 28. The new center replaces central research facilities at Verona, Pa., which the company outgrew. Somervell Park was named in honor of the late General Brehon B. Somervell who was chairman of the board and president of Koppers at the time of his death in 1955. While Koppers had pioneered in the manufacture of chemicals derived from coal, it was General Somervell who inspired the decision to become increasingly active in the chemicals and plastics fields. Research has been heavily emphasized in these fields.

One of the outstanding achievements in the entire design of the research center is the amount of safety built into the laboratories and adjoining offices. A unique feature in the laboratory wings is the use of positive and negative atmospheric pressures in certain areas to remove the danger of any possible build-up of toxic fumes. Specially designed fume hoods—some of them large enough, rising about 7 feet from the floor, to serve as "walk-in" areas, and others rising from the level of the benches—are used to help create these special atmospheric pressures.

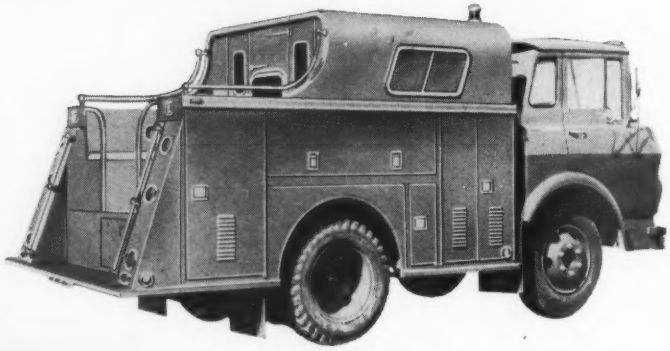
Each modular laboratory has two doors—at opposite ends—and the principal exit is provided with safety shower, fire extinguisher, blanket and cut-off valves such as gas, nitrogen, and electricity. An eye-wash fountain is adjacent to the laboratory sink.

A large and completely equipped auxiliary power plant will automatically switch on and take over in case of power failure. Water is supplied by the Monroeville Water Supply and the research center has its own multimillion-gallon storage facilities on an elevation. A yard hydrant system with ample outlets and an interior fire alarm system add to the fire protection features. An eight-man fire brigade is on duty at the research center.

Koppers produces a treated lumber which has been given a flame spread classification of 15 by Underwriters Laboratories, and an expandable polystyrene which is described as self-extinguishing since, it is claimed, except in the presence of an outside flame source, it will not burn. □□

More for your Money...in MORYSVILLE

F-157 EMERGENCY BODY



- Portable Generator & Pump
- 2 Telescopic 500W Lights
- 2 Spring-Loaded Pike Pole Tubes
- Full Length Seats • Hvy. Duty Const.
- Suction Hose Storage
- Chrome Plated Railings
- Diamond Plate Decks
- Available in 72" to 128" CA (Shown 72" CA)
- Double Panel Doors with Full Length Rod Type Hinges with Brass Bearings

MORYSVILLE Body Works INC.

813 SOUTH READING AVE., BOYERTOWN, PENNA.

DISTRIBUTORS IN PRINCIPAL CITIES

Also a complete line of compact and versatile Fire, Fire-Crash, Rescue and Emergency Units and Special Built Fire Bodies. Finest materials and workmanship, extra-rugged construction and original modern design. Compartments arranged for handy stowage of fire fighting, first aid and life saving equipment, helmets, rain gear, tools, tanks, portable pumps and generators, etc.

Write for FREE Literature

Association news

NFPA Names New Committee Chairmen

Five new chairmen have been named to head technical committees which prepare National Fire Protection Association codes and standards.

Graham W. Bice, American Electric Power Service Corp., New York, N.Y., will head the new Committee on Boiler-Furnace Explosions.

William E. Clark, fire service training supervisor, Wisconsin State Board of Vocational and Adult Education, heads the Sectional Committee on Protective Clothing Equipment for Fire Fighters. This is a new section within the Fire Department Equipment Committee.

Pierre R. Vallet, Insurance Company of North America, New York, N.Y., heads a new Sectional Committee on Marinas and Boatyards, previously handled by the Committee on Motor Craft.

Richard B. Smith, U.S. Atomic Energy Commission, Washington, D.C., heads the Committee on Combustible Metals. He succeeds John A. Peloubet, Dow Metal Products Co., Midland, Mich., who will continue as a committee member.

Fire Marshal Raymond M. Hill, Los Angeles, Calif., heads the Sectional Committee on Dangerous Chemical Reactions. He succeeds Howard H. Fawcett, General Electric Company, Schenectady, N.Y., who will remain as a member of the committee. □□

L. A. County Improves Helicopter Equipment

A new helicopter tank which doubles and triples the carrying capacity for water and chemicals has been announced by the Los Angeles County Fire Department. Made of aluminum, the tank carries up to 105 gallons of water or chemicals and was developed by the Research and Development Section of L. A. County under Captain Frank Hamp. Cooperating with the fire research unit were Jeb Aircraft Corp. of Long Beach, Calif., and fire department helicopter pilot, Roland Barton.

"This new tank will not only increase the capacity for helicopter operations on fires, but is a prime example of what the fire service can do to help itself in research and development," said L. A. County Fire Chief Keith E. Klinger. "I am proud of this achievement and hope than we can contribute many more."

Chief Klinger feels the new tank, which was recently tested at the department's combat training center, will make helicopter suppression operations more precise, and that the new unit definitely has structural capabilities. The old tanks or bags carried from 35 to 70 gallons, while the new tank carries from 70 to 105 gallons, depending on the type of helicopter, danger and other conditions.

Cliff Dektar

RESCUE BOATS

PATROL BOATS

JET FIRE BOAT for F.D.N.Y.

WELDED ALUMINUM HULL-$\frac{5}{32}$"
NOZZLE PRESSURE 125#
780 GPM.–23 M.P.H.
HANLEY HYDROJET PROPELLED
20'-LOA,–8' BEAM,–12" DRAFT
3'–9" FREE BOARD AMIDSHIPS
CONTACT US FOR YOUR REQUIREMENTS

Built by

PETERSON BUILDERS INC.
STURGEON BAY, WIS.
SINCE 1933

Firefly License Plate Signs

Five distinctive designs

CHELMSFORD FIRE DEPT.
PORT ORCHARD RESCUE SQUAD
ALBANY FIRE DEPT.

Made on heavy aluminum plate. They are durable, readable, will outwear your car, and will stay reflective. Made for all officers and a host of other standard bases.

See your dealer or write to

PACIFIC REFLEX SIGNS BOX 323, McMINNVILLE, OREGON

Among the buffs

By PAUL DITZEL

FIRE ENGINEERING'S close friend and ardent buff, Pierre Rabbitte, itinerant fire fan writes from Paris that at least one women's fashion designer will, this winter, bring out a complete line of lace-trimmed fire clothing for women. Pierre says the designers were intrigued when word reached them from Castlewood, Colo., that a petticoat fire brigade in that Denver suburb was putting out fires while the menfolk were at work.

By way of explanation, it must be noted that the women are *actually* putting out fires of the type that have made hook and ladders, pumpers, and snorkels famous for lo these many generations. Seems that about a dozen housewives drop their broomsticks and remote television set controls and speed off to blazes when a fire (usually caused by a man, no doubt) breaks out in Castlewood. The women—about a dozen of them—are notified of fires by a system of fire phones connected like old-time party-line telephones.

Pierre and I discussed this most disturbing turn of events over a transatlantic cable (note to Editor Don O'Brien: You'll be getting the phone bill shortly). Both of us wondered how Castlewood ever gets the women off the phone and on the way to the fire, assuming the Castlewood brides are the same as women in Los Angeles, Paris, and East Overshoe, Neb.

Granting that the women cut their discussion time on latest hairdos, baby formulae, and the Great Books to a minimum, they are then off in a swirl of detergent suds to the conflagration. And this is where Pierre tells me the Paris designers come in. The Castlewood ladies, so the story goes, decided in-between alarms that since rubber "bunker coats" are available in a wide style of colors, designs, and sizes—all at the same bargain basement price—then why not choose a pretty shade of cerise? Why not! So they did.

Pierre says one of the Parisians says he plans to bring out a complete line of accessories to go with these turnouts, so that the good ladies of Castlewood may enjoy the decolletage and skirt length that will show them off at their best while they are performing such mundane tasks as laying hose, climbing ladders, and opening up stuffy attics.

These accoutrements, word around Paris salons has it, will be from the skin out. Milady will be pleased to see the latest fashions for fire, complete with tailored accessories for carrying spanners, axes, and a unique area of her costume for storing breathing apparatus.

Mrs. Ruth Conradi, 86 Wakeman Ave., Newark 4, New Jersey, Chief Dispatcher for the Bell and Siren Club, Inc., is certain the idea will spread nationally and that fire ladies will take their place beside the men in smoky basements. (Lord help the New York City Fire Department if they ever get an alarm from the bargain basement of Macy's on Dollar Day.)

The idea has merit to a certain point, I suppose, but I can't help wondering what's going to become of the fire service, especially in those cities with a 24-hours-on; 24-hours-off tour of duty. And who is going to lead these brave damsels into the fiery infernos? Why, a man, of course, just as in Castlewood.

I know not the name of the Chief of the Castlewood Volunteer Fire Department, but I hereby give him a tip of my wear-worn fire helmet. He must have the most difficult fire chief's job in the world. A moment of silence, please, for this hero.

Further research on this most significant advancement in the fire service since radio and snorkels, shows that the Castlewood department boasts two small pumpers, an array of nozzles and hose, truck-mounted water tanks with 500-gallon capacities, and a station wagon full of emergency first-aid equipment such as a resuscitator and oxygen tank. I am told a sewing kit also is carried aboard, but I could not verify this information, though my informant feels the tip probably is accurate.

Another New Champion to Imperial County Fire District* — Their Sixth DARLEY

*EL CENTRO, CALIF.

W. S. Darley & Co. 2000 ANSON DRIVE, MELROSE PARK, ILL.

ESTABLISHED 1908

The Castlewood fire ladies respond to an average of six to seven alarms a week in a 24-square-mile area. Don't ask me whether they drive the rigs to the fire. I was afraid to ask. Spokesmen for these fire femmes seems to be one Frances Roth, described as "a five-foot-two, 120-pound brunette bundle of energy" who looks as if she just stepped from the pages of Vogue as she hurries to the latest outbreak.

Everything being equal in Castlewood, the women put out the fires during the day and their husbands put out the fires at night, says Mrs. Roth, mother of four children ranging from 15-21. Should the husbands utterly fail in their duty, the women are available on call to respond on a second alarm. So far there has not been a third alarm. That fact, I believe, falls in the words-of-one-syllable department. Mrs. Roth feels that their red firecoats nicely match the black turnouts worn by the men.

Late word from Castlewood has it that the fire chief's name is Bill Stahm, a construction worker. Questioned on his unique position, Chief Stahm said, "The girls are doing their job well." More he would not say.

Nor will I, either. Please continue to send your buff club news, notes, and anecdotes to me at 4234 Don Diablo Drive, Los Angeles 8, Calif. Regretfully, letters cannot be answered, other than through this column, which fact ought to get me off the hook with Ruth Conradi and all the other women. Last time I discussed feminine fire fans in this column, my house was picketed for three days and Zsa Zsa, my basset hound, refused to speak to me. □□

CHICAGO AIRCRAFT CRASHES

Continued from page 1077

During this period of two or three minutes, the grass around the plane was burning fiercely. Then another explosion rocked the tail section and metal began to melt. At this point, the Bensenville fire fighters gave up all hope of saving anyone who might possibly be in the section and moved back for their own safety.

Rogge reported that suddenly the ground fire was extinguished and the flames were confined to the aircraft and its scattered remains. The bodies of the 37 victims then became visible. He said they were all in a line, following the path of the fallen plane. Units of the Chicago Fire Department and the Air Force, both stationed at O'Hare Field, arrived and sprayed foam and carbon dioxide over the wreckage, and the fire was out within a few minutes. At the same time, emergency equipment from the surrounding communities arrived to aid in the disaster.

Fire Commissioner Quinn, who is also director of Chicago's Civil Defense Corps, said, after the crash, "I

ROCKWOOD

PocketAIRE

- COMPACT
- LIGHTWEIGHT
- FOR EVERY FIRE MAN
- EASY TO PUT ON ENROUTE TO FIRE

Three models . . . full 30 minutes . . . full 20 minutes and a full 10 minutes.

Now firemen can add precious minutes to their search for trapped victims. Rockwood's lightweight PocketAIRE, the most compact self-contained breathing apparatus made, permits firemen to put in action faster and work more efficiently without hindrance by bulky equipment. PocketAIRE is small enough to fit in pocket, clamp to fire coat or be worn in a shoulder harness.

What's more, by using pure, clean oxygen, PocketAIRE supplies the most concentrated, most effective element to safeguard human breathing. Another *extra* protection feature, on all PocketAIRE units, is the safety cylinder that allows 5 minutes for escape. Cost pennies to refill and no maintenance required.

Protect every fireman in your department with economical, safe, simple to use Rockwood PocketAIRE.

For more details, write to
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PURE, CLEAN OXYGEN for Refilling is Available Everywhere!

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Distributors in all principal cities.

municipal and industrial fire fighting equipment

HALPRIN SUPPLY CO.

1355 South Flower St.,
Los Angeles 15, Calif.

was greatly impressed with the extremely fine work done by the Bensenville Fire Department. Reports reaching my desk from all agencies reflect the outstanding job done by this small department which rose to meet the challenge and met it well! The City of Chicago and the areas around us can be thankful that we are surrounded with such fine and efficient organizations which twice this month have proven themselves ready in case of an emergency. I'm sure that our local Civil Defense Corps can be proud to know that such calibre of men are manning emergency equipment."

Unfortunately, in the days after the crash, a newspaper article carried a story which referred to Chicago as "Big Brother" and that, without Chicago's big guns of attack, the airplane crash would have been worse from a fire point of view. Commissioner Quinn, upon hearing of the article said, "I can remember in 1933 when "Big Brother" couldn't make it without the help of the suburbs and their equipment and fine men." He was referring to the stockyard fire when all available Chicago equipment was pressed into service at the fire and more than 25 pieces of suburban equipment manned fire stations throughout Chicago and carried on the fire fighting operations within the city, for more than two days. He then reminded everyone of the recent tornado which struck Chicago, when assistance was needed and gratefully received from Chicago's neighbors. Quinn said he was sorry that such a story appeared and, in closing, added, I'd take my hat off to any one of them, any time!" □□

Sound Philosophy

Captain Perry Scott, Engine Co. 20 of the City of Phoenix, Ariz., Fire Department, had a sage and ready answer for a lady who was apologizing for calling fire apparatus to her home for what turned out to be only a minor short in an electric clothes drier. Replied Captain Scott, "Lady, don't ever hesitate to call us. We'd rather come to look for smoke than come to look for you!"

Asst. Chief S. E. Barber

APPROVED by Underwriters' Laboratories, Inc. and the Associated Factory Mutual Fire Insurance Companies.

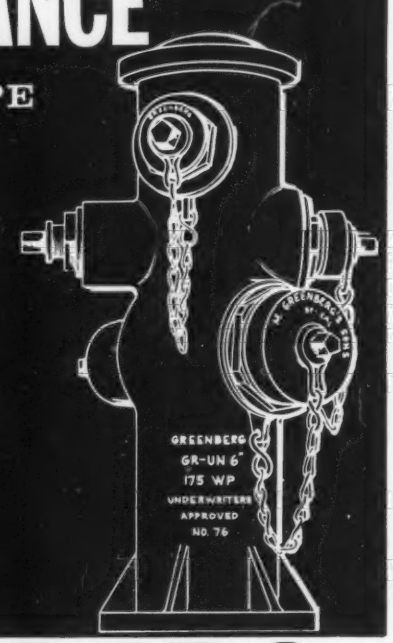
PERFORMANCE

CALIFORNIA TYPE

The most widely preferred design in use throughout temperate climates.

Specifications:

- Independent valve for each outlet. Permits the addition of extra lines without shutting off those already in operation.
- Fast Breaking Valve Design. Seat angle provides maximum efficiency, minimum resistance, quick opening and full flow of water. Eliminates water hammer and valve chatter at full 200 lbs. working pressure.
- Full 6¼" waterway.
- Simple construction. All bronze working parts and heavy cast iron body give long, trouble-free service.



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Offices in Principal Cities throughout the United States

Coming events

December 4-8—National Fire Protection Association Technical Committee Meeting. To be held at the Hotel Manhattan, New York City. General Manager, Percy Bugbee, 60 Batterymarch Street, Boston 10, Mass.

December 13—Southern California Conference of Fire Prevention Inspectors. Monthly meeting, Redondo. Corresponding Secretary, Ira A. Anderson, c/o Fire Department, Rialto, Calif.

January 10, 1962—Southern California Conference of Fire Prevention Inspectors. Monthly meeting, Placentia, Calif. Corresponding Secretary, Ira A. Anderson, c/o Fire Department, Rialto, Calif.

January 22-26—National Fire Protection Assn. Technical Committee Meeting. To be held at the Hotel Manhattan, New York City. General Manager, Percy Bugbee, 60 Batterymarch Street, Boston 10, Mass.

February 12-14—Association of Fire Districts of the State of New York. Annual convention to be held at the Hotel Lafayette, Buffalo, N. Y. Secretary-Treasurer, S. P. Fox, 77 Paul Avenue, New Hyde Park, L. I., N. Y.

May 21-25—National Fire Protection Association. Annual meeting to be held at the Sheraton Hotel, Philadelphia. General Manager, Percy Bugbee, 60 Batterymarch Street, Boston 10, Mass.

May 21-25—Fire Marshals Association of North America. Annual meeting to be held at the Sheraton Hotel, Philadelphia. Secretary, Carroll Shaw, Deputy State Fire Marshal, 100 Washington Street, Hartford, Conn.; Executive Secretary, Charles S. Morgan, 60 Batterymarch Street, Boston 10, Mass.

May 21-25—Society of Fire Protection Engineers. Annual meeting will be held at the Sheraton Hotel, Philadelphia. Secretary-Treasurer, Robert S. Moulton, 60 Batterymarch Street, Boston 10, Mass. □□

INSPECTING SUPERMARKETS

Continued from page 1079

the truss roof? This is probably not so and affects fire strategy seriously. It is most important to know if there is complete separation between the supermarket and the adjoining stores, for if fire enters the hanging ceiling of any store, it will communicate to the rest of the roof space via this construction. It may be possible to check this by the building plans. A better method would be to crawl into the hanging ceiling and inspect this feature visually, if possible to do so.

Inspecting interior

Ask for the manager or other person in charge. Identify yourself and inform him of intention to inspect. Advise him of the general purpose of such inspections and request him to accompany you or to assign someone familiar with the building. Get all information needed from this person for your records.

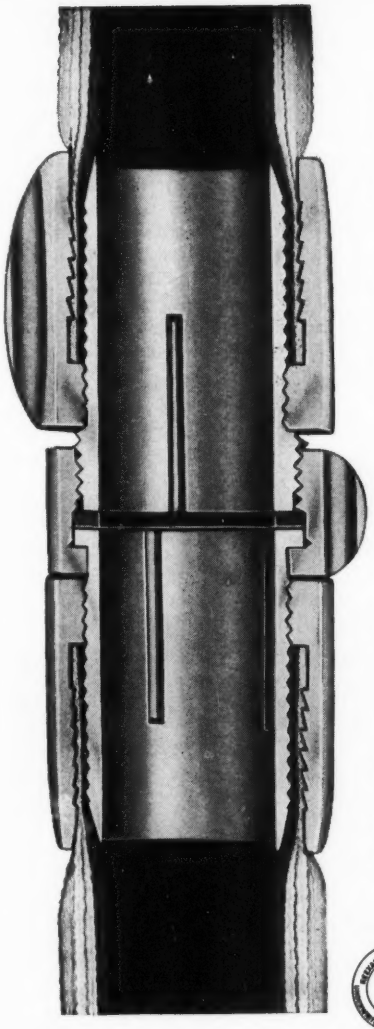
It makes little difference where you start so long as you follow a logical sequence which will assure coverage of the entire structure. The newer type of store generally does not have a cellar. In the older stores the situation varies. Briefly, machinery such as refrigeration motors, heating plants, gas and electric services, as well as stock storage will be found here.

Pay particular attention to the stairs. You may find them badly blocked by some form of roller mechanism or planks forming a slide. Some have conveyor belts. Visualize trying to "make" such cellar stairs to fight a fire. If you and your men do not know of such conditions, it might mean a slide to death. Such blockage of stairs should not be permitted.

The boiler room should be enclosed with a minimum of 1-hour fire-retarded partitions with self-closing fire-resistive doors. Ceilings should be similarly protected. Doors to dumbwaiters, chutes, etc., should be fire-resistive and self-closing. Stairs should be enclosed with fire-retarded materials.

Where cellars are badly cluttered, with little aisle space and lack of sufficient fire-protective features, recommend an automatic sprinkler.

Check the utility spaces, work rooms, etc. This is the area behind the counters with the butchers' cutting rooms, etc. Find out where the entrance to the hanging ceiling is and inspect. Note the duct work, depth of hanging ceiling, type of truss (wood or steel) and how well the division wall seals off this roof space from other stores. Note the proximity of re-



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Special engineering applications on request.

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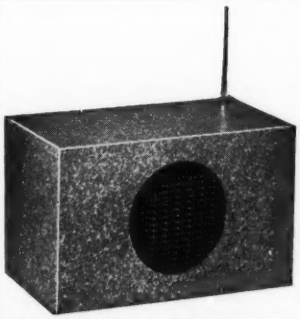

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RADIO ALARM SYSTEM

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cessed lighting fixtures to adjacent woodwork.

Check the location of service doors. Note if it is a practice to keep them closed and locked. Note the type of locks and methods of barring doors.

Storage areas should be thoroughly checked. In most cases they are located in the rear as part of the utility area and work spaces. But often they will be found to run along the side walls. In such cases, a partition divides the store from the side storage area. It is preferable that the partitions run completely to the ceiling to seal off this area from the store proper. Require adequate aisle clearance and good housekeeping conditions.

Look for an incinerator room. If there is none, then chances are accumulations of old cardboard cartons are piled up for future sale. If there is an incinerator, see that it is cut off from the rest of the store by masonry walls and ceilings and fitted with a self-closing fire door to room. Do not permit storage of combustible materials. Check means of ventilation to room for proper combustion of burner. Incinerator chimney, if of metal, must have adequate clearance from any woodwork.

You may find metal chimneys separated from adjacent woodwork by only 1 or 2 inches. Realizing this is insufficient clearance, a contractor may cram this space with insulation believing this will prevent the transmission of heat from the chimney to the wood. This, of course, is not true. Insulation may delay transmission but eventually the heat will pass through and a fire may result.

Metal chimneys should have minimum clearance of 12 inches from combustible surfaces. Masonry chimneys with flue linings require only 4 inches. The chimney should be capped with a spark-arresting wire mesh.

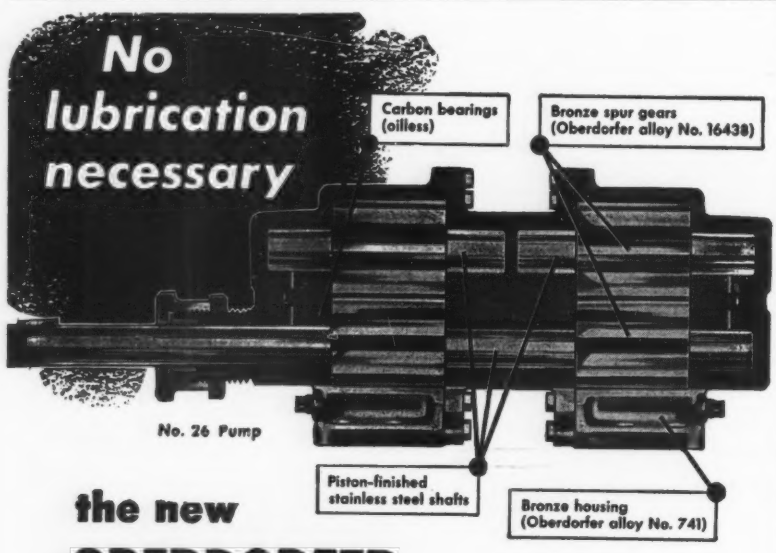
Heating plants in the newer supermarkets are generally forced hot air, using either gas or oil fuel. Sometimes a heating unit is suspended from the ceiling at the rear of the store. It may be on grade level and often it will be located on a concrete mezzanine platform about 8 feet above grade. Many times the air-conditioning system is located on this elevated platform alongside the heating plant.

Heating plant problems

The problems associated with heating plants generally fall into the same category. The major cause of fires is insufficient clearances from the heat-producing surfaces. There should be ample room to service and inspect the heating plant, plus sufficient ventilation for proper combustion and heat dissipation. Heating plants should be in a separate room, constructed of fire-retarded walls and ceiling with self-closing fire doors. There should be a fire extinguisher suitable for Class B fires located outside the boiler room. A remote control switch should also be outside the boiler room. See if there are automatic safeguards on the heating plant such as the stack control which acts to shut off the pump if ignition does not take place within 90 seconds, high and low water cut-offs, temperature-limit controls, pressure-limiting controls. Check to see if the burner is regularly cleaned, oiled and serviced by competent people.

Note the location of the oil tank if the plant is an oil burner. Most tanks are buried outside. Find out what kind of oil is being used. The heavier oils, Nos. 5 and 6, require preheating and are more hazardous.

See if the oil supply line is protected from injury which might cause a leak. Note where the vent pipe is located. If not so located that the driver of the supply truck can see it from where he is filling the tank, require some kind of warning device to tell him when the tank is filled. Vent pipes should be at least 1¼ inches in


No lubrication necessary
Carbon bearings (oilless)
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BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $249.50 No. 13 — $122.50

Slightly higher west of Rockies

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12-Volt RADAR-LITE

Double the voltage — twice the light! Features gun-type "Switch-Lock", another Burgess exclusive!

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BURGESS offers dependable lights that meet the rugged requirements of fire-fighters. From the ultra-modern Radar-Lite series to powerful industrial flashlights, BURGESS has the best in portable lights and in batteries for lanterns and flashlights!

TW3
6-Volt RADAR-LITE
40,000 Candle-power Sealed Beam, Exclusive "Switch-Lock", Red Safety Flasher.

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Low cost emergency flasher, visible for full mile.

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Standard type 6 volt battery. America's most popular heavy duty 1½ volt battery.

4F5H
"Metalclad" battery for 7½ volt emergency lights.

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"Metalclad" battery for 9 volt emergency lights.

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diameter and protected from the weather with a gooseneck or hood.

Get a general idea of the heating duct network. Once a fire enters a duct, it becomes a difficult job to try and head it off. Advance knowledge of where the ducts run, and any special features of them, will be invaluable.

Air-conditioning ducts

Most new stores are fully air-conditioned. Where the stores are not too large, they may have a few unit-type conditioners. Since these cool the area directly without employing ductwork, they are far more desirable from the fire department viewpoint.

In the main, however, there will be a duct network similar to the heating plant, and it may use the same ducts. In any event, the problems will be similar. Try to find out if the ducts are lined and what kind of lining is employed. If the lining is combustible, it is very much of a problem if fire gets in. Most air-conditioning ducts are well insulated on the outside of the ducts. Many times an insulation is employed which, though in itself is not combustible, has an outside cover of plain paper.

See that there are provisions for shutting down the air-conditioning system if fire enters it. Find out if there are dampers which can segregate the duct system and if they are designed to operate automatically if fire enters. See if the duct work passes through fire walls or from store to store. If so, should fire enter the duct, then the protective feature of the fire wall is nullified to a great degree. If there is a fresh air intake, try to determine if it is located where it can suck in flames and/or smoke from an exposure fire.

Machinery for refrigeration

Refrigeration machinery is too often located wherever space is found for it, rather than in a separate machinery room. Find out from the plate on the machine what kind of refrigerant is used. No refrigerant should be allowed which is by itself toxic, irritant or flammable. Usually the refrigerant employed is one of the freons which are generally harmless and show no ill effects from being breathed. But they can be deadly during a fire! They may break down, liberating chlorine, fluorine, phosgene and carbon dioxide.

See that belt drives of motors are guarded. Note if there is a regularly established servicing policy to insure that machines are cleaned, oiled and otherwise properly maintained. There should be thermal protective devices on the motors to shut them down in

Ideally Suited for

SUPERMARKET FIRE PROTECTION at low cost!

SINGLE ALARMS or SYSTEMS

save life & property with

New Model Falcon®

- Simple visual inspection with new sight glass — added neatness of design.

No one can place a price on the possible loss of lives due to fire. But Falcon Automatic Fire Alarms & Systems can give early warning of fire to protect lives and guard property.

Falcon Automatic Fire Alarms and Systems are:

- **LISTED BY UL AND ULC for use with 600 ft. of ¼" aluminum tubing**
- **SELF-CONTAINED (No wires or batteries)**
- **FULLY GUARANTEED**

. . . and they are low in cost!

IMPORTANT!

Falcon Alarms may be installed to cover 35% of total area, where 78% of fires originate.

By giving early warning of fire, they help avoid customer panic, and the catastrophic loss-of-life of customers trapped in the havoc of fire-swept aisles, disintegrating ceilings and burning partition walls.

Falcon Alarms, for added safety, can also be connected for automatic auxiliary exit lighting.

ACT NOW—write for descriptive literature, complete details.

(Falcon Alarms are inexpensive, simple to install.)

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the case of overheating. In order to prevent storage of cartons, etc., from blocking access to and cutting off ventilation, there should be protective guarding or screening around the machines.

Note the location of gas and electric meters and shut-offs and see that they are not blocked by storage of materials. You may need to shut them down during a fire and it would not be much help to know the location, if they were completely inaccessible due to storage.

Watch for electrical defects

Electrical defects are a common cause of fires and should be looked for during your inspection. Where you suspect serious electrical defects, call in the city electrician, for few firemen are qualified to state with authority what is an electrical violation of serious proportions.

Rotisseries are becoming very common in supermarkets. Where large amounts of food are prepared daily you may find accumulations of grease gathering above. Most will have a hood arrangement with a duct to carry the cooking odors and grease up through the roof. See that such duct has a filter installed to trap the grease before it enters the duct. It should be noncombustible, and cleaned often enough so that it does not become obstructed with grease.

Housekeeping may cause trouble

Housekeeping conditions in the average store may run from poor to terrible. You may find narrow aisles, large overstocks of goods, cubicles built of 2 x 4's and wire mesh to guard the more valuable stocks such as cigarettes. There may be accumulations of paper bags and cartons, bags of sawdust for butchers, paper scraps and shavings from banana shipments often used to provide a bed for display of fancy fruits, doors blocked with crates, stock piled against heating or air-conditioning plants, shopping carts needing repairs, hand trucks for moving heavy crates and roller machinery to move crates and cases from one area to another.

The main body of the store is generally well maintained. The problems here are the blocking of aisles by "crash" selling displays (books, hardware, clothing, etc.), by shopping carts and by temporary storages pending loading onto the display counters. Insist that these aisles be maintained clear.

Note hanging advertising posters; sometimes paper streamers are hung throughout the store. If not occasionally checked, you may allow a condition to build up whereby a fire could flash over the entire store.

Look for fire extinguishers hung on wall brackets, not just sitting on the floor where they can be discharged accidentally. There should be at least one waterbase extinguisher (2½-gallon size) for each 2,500 square feet of area, plus a carbon dioxide or dry chemical extinguisher for any Class B or C fires. Check on the proper recharging of such extinguishers.

Watch for overstocks of flammable liquids such as lighting fluids, hair sprays, alcohol-based toilet preparations, polishing waxes, paints and thinners. In particular, check on storages of antifreeze during the cold weather.

So that you may not underestimate the fire problem, just look around at the number of display cases. Note how the height of these displays block vision from aisle to aisle. See the variety and amount of goods offered, such as toiletries, drugs, medical preparations, clothing, toys and novelties

Don't gamble with the life and serviceability of your fire hose. Good hose will provide years of trouble-free service ONLY if it is* washed *thoroughly and uniformly,* dried *quickly and* stored *safely.

CIRCUL-AIR lengthens hose life and keeps hose in top condition

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The fast, modern way to handle, store and load hose.

Saves space. Holds 1800 ft. of 2½" hose—proportionately more of 1½". Roll it right up to the truck for complete hose reload—out of the way when not in use.

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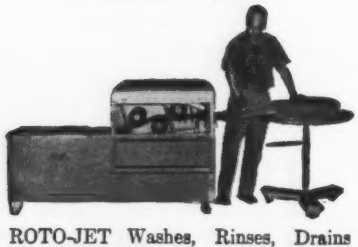

ROTO-JET Washes, Rinses, Drains hose thoroughly and quickly. Simple, one-man operation. With or without detergents, ashes, dirt, mud and sludge are automatically scrubbed out and flushed away.

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The patented, electrically operated Circul-Air hose dryer circulates prewarmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life. No other drying method is so fast—so economical—so easy to use. Circul-Air is the preferred drying method in over 6,000 leading Fire Departments.

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575 EAST MILWAUKEE
DETROIT 2, MICHIGAN

made of plastics, plastic dishes, utensils, stationery, inks, articles wrapped in flimsy plastic bags and fruits bedded in tissue paper.

Evacuation

In supermarkets the National Board Building Code allows 80 people for each unit of exit width (22 inches). Twenty-two inches of width will allow one person to pass through at a time, or a single file. If we assume only one person a second will pass through an exit, it will take 80 seconds to vacate the store. However, the people first have to reach this exit, so allow them another 60 seconds to walk the maximum distance to the exit. According to these figures, we can evacuate this store in 2 minutes and 20 seconds. Granted under fire and smoke conditions, these ideal figures may not be realized, but we would still be within pretty safe limits. Getting back to our store of 20,000 square feet area with the 666-person capacity, if we require 22 inches exit width for 80 people, then for 666 people, we need to divide 80 into 666, or a little over 8 units of exit width. This totals to 22 x 8, or 176 inches. Change this into feet, and we get a little better than 14 feet of required exit width. This may be split up as required or desired by the owner, but keeping in mind the requirement of no more than 100 feet to an exit, we would probably have a pair of double exit doors and one single exit door.

Emergency exits should have illuminated exit signs above them, and where they are not visible from all parts of the store, there must be directional arrows pointing to such exits.

Inspection conference

A conference at the conclusion of the inspection will determine what is required to make the building comply with regulations, and needed violation orders are issued. Other necessary corrective measures which are not violations, such as additional hydrants, water mains, parking enforcement, etc., are also noted for action.

Combining all the knowledge gained from the inspections, discussions are held within the department of the various types of fires which could happen in the supermarket and plans are made to combat them. All information about the structural layout is committed to a drawing or rough sketch. This is filed and carried on the apparatus. If a fire does occur in a building you have surveyed in this manner, you may be pleasantly surprised at the efficiency with which you can handle it. □□

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ALUMINUM
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REGULATION
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THE FIREMAN'S STANDARD OF SAFETY
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"THERE IS NO SUBSTITUTE FOR EXPERIENCE"
Write for Catalog 361
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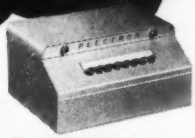
Over 600 PLECTRON ALERTING SYSTEMS *in use today!*



Dependable, split second tone and voice messages in the home, office or shop of each fireman makes PLECTRON the ideal radio tone alerting system for your locality. Long range reception, up to 10 miles without rooftop antenna. Crystal controlled, transformer powered, choice of red, ivory, gray cabinet. For detailed information write, wire or call collect!

The PLECTRON Fully Automatic Tone Generator
- Select Intermittent or Steady Tone
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PLECTRON FACE SHIELD
Positive eye & face protection against: Heat; Smoke; Debris; Water; Flying Embers; Wind; Rain; Dust; Snow

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Overton, Nebraska

Of Course, He Fiddled...

Whether Nero had arson in his heart or not, doesn't much matter — for there was no fire department in Rome to change the course of history.

Unfortunately, even today's highly skilled fire fighters are often handicapped by the modern-day "Neroes" of belated discovery and delayed alarm.

All firemen know, however, that when ADT Protection is on the job, there is no "fiddling around!"

ADT

AMERICAN DISTRICT TELEGRAPH COMPANY

A NATIONWIDE ORGANIZATION

155 Sixth Avenue, New York 13, N. Y.

The round table...

Discussion of current fire department and fire management problems

Wetting Agents in the Fire Service

THIS IS THE LAST installment of the Round Table on wetting agents in the fire service.

Next month's topic will cover training practices. The questions are given in a box elsewhere in this issue.

Readers are invited to participate in the discussion. Address replies to the Round Table Editor, FIRE ENGINEERING, 466 Lexington Avenue, New York 17, New York.

The Discussion

Melvin E. Sanford, Chief, Tiverton, R. I.: We use wetting agents on specific fires and proportion them into hose lines with portable equipment. They are of the capsule type and are used in connection with blenders. They are used extensively on peat bog and hay fires. We find they have a very high penetrating action, plus a crawling action, which is necessary in these types of fires.

We do not use wetting agents on our everyday fires, as we feel the cost of the agent does not offset the benefit received. In other words, we feel the wetting agent is beneficial on some fires, but not on all.

Donald S. Charles, Chief, Charlotte, N. C.: Wetting agents are used by this department for specific applications. They are proportioned into hose lines through permanently mounted equipment on the discharge side of the pump.

The greatest advantage is their water penetration into normally nonabsorbent materials such as cork and cotton.

The disadvantages are corrosion of metal and damage to pump packing, as well as their effect on the waterproofing of canvas protective clothing and the cotton jackets of hose.

Walter G. Strickfaden, Chief, Columbus, Ohio: While we in the Columbus Fire Department do not use wetting agents, I have seen demonstrations of their use at a number of fire service conventions. I do believe that for deep-seated fires, such as in overstuffed furniture, cotton bales and materials of like nature, it would be advantageous to use them.

Justin George, Training Officer, Forest Grove, Ore.: We use a wetting agent in all our apparatus booster tanks. These units operate in a joint city and rural fire district which covers an area of 62 square miles, with all types of terrain. We have found that water efficiency of these four tanks, with capacities of 600, 800, 1,000 and 1,250 gallons, with the wetting agent added, has been increased by at least one-third, and in many cases, up to one-half more.

The wetting agent we use is a commercial detergent in granulated form, supplied in 100-pound barrels or 50-pound sacks, at a cost of $18.00 per 100 pounds. This is added to the water at the rate of 1 pound to 200 gallons. This mixture has proven to be the best all-around mixture.

We have used this solution for a period of five years. Most of the fire departments in this area have also been using this same wetting agent. We have found that it not only penetrates faster, but also has a semi-foaming action which

THIS MONTH'S QUESTIONS

- **Do you now use wetting agents in your extinguishing operations?**
- **If so: (a) Do you use them at all general fires or only for specific applications? (b) Do you use permanently mounted or portable equipment to proportion them into hose lines?**
- **If not, do you intend to adopt wetting agents in the foreseeable future?**
- **What advantages have you found in the use of these agents?**
- **What disadvantages have you been able to determine due their use?**

clings to surfaces for much longer periods of time. It also speeds up the control and extinguishment of all fires where booster tanks are used as the water supply. It also has a tremendous advantage in the extinguishment of grass and brush fires, in that only about one-third to one-half the amount of water normally used is necessary.

In general, since using the wetting agent, we have been able to control serious structural fires with the amount of water carried in the tanks. The wetting agent has many other uses around the station, such as washing dirty hose and equipment after returning from a run. It does not affect the tanks, hose or other equipment in any way which many other types of wetting agents do.

We have not found any disadvantages that would affect its use. The cost is well within the reach of any fire department, even those with limited budgets. There is just a little more maintenance on pump packings, but this is very minor. The refilling of the tanks will sometimes cause a foaming action at the tank fill, but this can be overcome by spraying water over the suds and holding them down in the tank. The best method of refilling is to fill the tank first with water, then add the proper mix to the water tank in a slurry form and stir it up in the tank with a filler hose.

F. E. Saefke, Chief, Fargo, N. D.: We use wetting agents in certain extinguishing operations, but do not use them on general fires.

We carry combination foam and wetting agent eductors to introduce the wetting agent into the 1½-inch lines and also carry properly sized containers filled with wetting agent to dump into pump cans and booster tanks.

We find we use less water and so have less water damage; we also have more assurance of complete extinguishment of fires in upholstery and mattresses, as well as deep-seated fires in large-dimension timbers and tree trunks, etc.

Using the wetting agent for specific applications only, we have found no disadvantages in its use.

Steve Taylor, Chief, Boise, Idaho: Wetting agents are used in our department, but only for specific applications.

They are proportioned into hose lines with a combination proportioner of foam and wet water that connects with a 2½-inch outlet from the pump with a pick-up tube.

One advantage in the use of this agent is its penetrating effect. We have found no disadvantages the way we are using it, providing we are following the information on wetting agents in the "Handbook of Fire Protection."

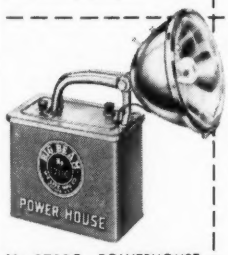
W. K. Blaisdell, Chief, Honolulu, Hawaii: Wetting agents are used in first-aid extinguishing operations, but only in specific applications.

We presently do not use either permanently mounted or portable equipment to proportion the wetting agent into hose lines, but have plans to ac-

No. 700A—2000 ft. beam • Large and small bulb • Four No. 6 batteries*

No. 211—1500 ft. beam • 2 bulbs • Two 6 V. batteries, one as spare*

No. 166—1500 ft. ray • Sealed beam bulb • 6 V. battery • All-purpose*



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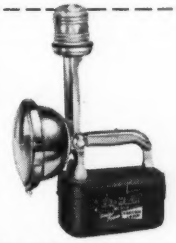

No. 164—1500 ft. ray • Sealed beam bulb and red flasher*

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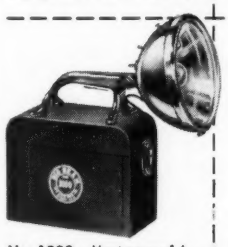
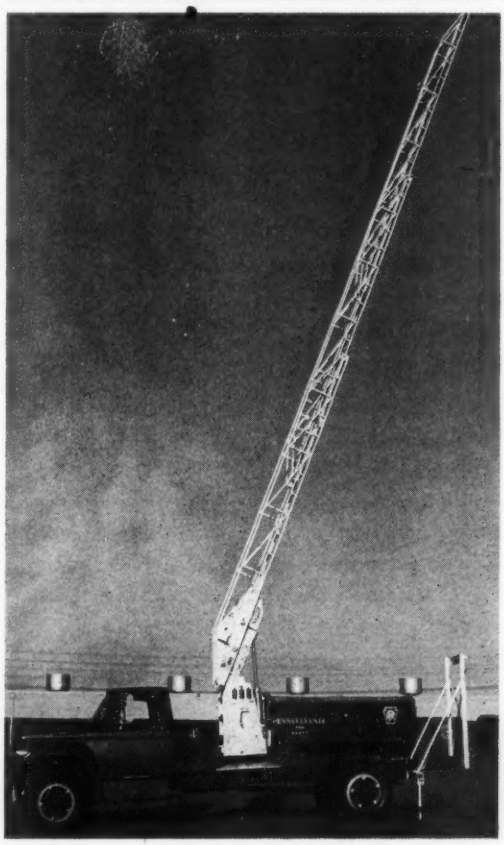


No. 1000—Most powerful—2500 ft. beam • 2 bulbs • 9 V. battery*

No. 408F—Steady or flashing flare • Three bulbs, one as spare • Two 6 V. batteries • Also transistorized models*

No. 666—1500 ft. ray • Sealed beam bulb • Clamps on 6 V. twin pack battery*



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quire such equipment. We use it in the form of a tube, in the proportion of one tube to 5 gallons of water. The contents of each tube are inserted in a portable water extinguisher when the need arises.

We have found them effective in the extinguishment of deep-seated fires. They have disadvantages in that they are too expensive and contribute to the high cost of operations. They are also highly corrosive and containers and tanks must be flushed thoroughly after each application. Due to their corrosive nature, they cannot be stored for long periods.

Robert Mills, Chief, Salem, Ore.: We use wetting agents for specific applications. Portable equipment is used to proportion them into hose lines. One of the chief advantages of these agents is their penetrating power on specific materials.

John J. Killen, Chief, Baltimore, Md.: We do not use wetting agents to any great extent. They are used only for specific applications and are proportioned into hose lines by portable equipment.

Wayne E. Ulm, Chief, Des Moines, Iowa: Wetting agents are used by this department for specific applications. Portable equipment is used to proportion them into hose lines.

The type of foam-wetting agent we use is also good for small oil fires and for oil or gasoline spills to prevent ignition of flammables.

They do have certain disadvantages: They are difficult to carry in portable containers; metal cans rust through and contents leak out; delay in placing equipment in service and supplying additional wet water when needed.

Harold C. Fisk, Chief, Tacoma, Wash.: We do use wetting agents, but due to their high cost, we use them very sparingly. We have large warehouses filled with wheat, and one time we had a fire inside one of them. A great amount of wet water was used to good advantage. We have also used them on baled waste and mattress fires.

L. D. Carney, District Chief, Wichita, Kans.: Wetting agents are used for specific applications. They are used only in our hand pumps. One advantage is their penetration on mattress and overstuffed furniture fires. We find that after using wetting agents we are able to remove mattress or furniture from building, with less chance of the fire flaring up. This, of course, cuts down considerably on the water loss.

Harold J. Kane, Chief, Paterson, N. J.: Wetting agents are used in our department, but only for specific applications. Both permanently mounted and portable equipment are used for proportioning them into hose lines.

We find that in particular instances they achieve better penetration, such as on mattress fires in hotels and rooming

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NEXT MONTH'S QUESTIONS

- (a) How long is your department's recruit or probationary training course?
  (b) After completion of basic training, what provisions are made for advanced training?
- (a) Do you provide for continuous training for all personnel?
  (b) Do your training records indicate the amount and kind of training each individual has received?
- (a) Do you provide special training for officers?
  (b) If so, briefly outline the subject areas.
- Do you provide your own manual of instruction or employ one prepared by some other agency?
- Do your instructors participate in county, state and/or national training conferences or programs?

houses, bulk materials in factories, etc. We have been fairly successful in using wet water on piles of wood and debris from dismantled homes. Hundreds of homes are being torn down in conjunction with our rebuilding program, and on occasion, wet water achieved penetration when used with a piercing applicator shoved deep into the pile of debris.

The cost involved seems to be the only real disadvantage that we can see.

C. M. Bullock, Chief, Houston, Tex.: This department does not use wetting agents, nor do we intend to do so in the foreseeable future. We believe that the value of wetting agents has been adequately demonstrated and proven. However, we believe they have real value where there is a shortage of water for fire fighting. We further believe that only in rare instances could fire damage be appreciably reduced by their use whenever an adequate source of water for fire fighting purposes is available. We therefore believe that, at present, there is not sufficient justification to equip our fire fighting apparatus with wetting agents, tanks and proportioners.

Raymond J. Brady, Chief, White Plains, N. Y.: We have used wetting agents for several years, in the overhauling of charred areas; on mattresses, upholstered furniture; and on any surface or material where the possibility of rekindle exists.

In our operations we have found the portable equipment more adaptable than the permanently mounted type. The portable equipment prevents, in most cases, long layouts of hose as it permits the appliances to be placed in a line very close to the area where the wetting agent is to be used.

In my opinion, the use of wetting agents cuts down the time consumed in overhauling operations.

One of the possible disadvantages is overconfidence, whereby extensive overhauling operations may be curtailed too soon. Another disadvantage is their effect on salvage covers.

John L. Swindle, Chief, Birmingham, Ala.: The Birmingham Fire Department tried a wetting agent with their equipment some 15 years ago, but had to discard it because of the corrosive action it caused on our pumps, etc. We found it was fine for mattresses and cotton fires, but the damage caused more than offsets the advantages.

John M. Hill, Chief, Sioux City, Ia.: We do use wetting agents, but only on specific fires, such as in mattresses, upholstering, deep-seated rubbish piles, etc., where regular water does not penetrate.

One disadvantage is that if it is allowed to remain in the pump, it cleans the grease off the pump packings, thus allowing the pump to start leaking.

We add the wetting agent to our water tank at the time we intend to use it, and after using it, we thoroughly flush out the tank and pump. □□

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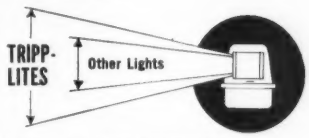

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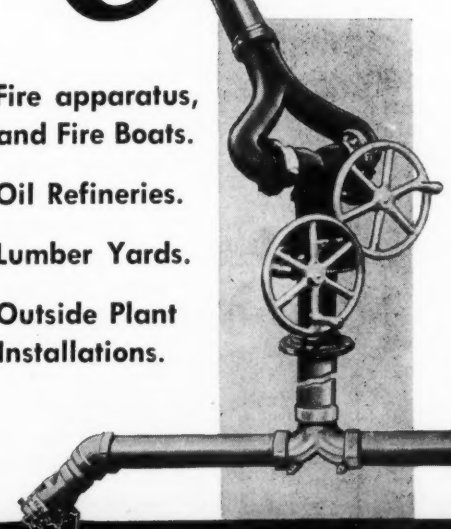

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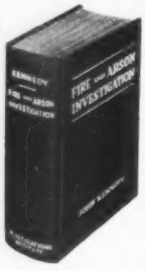

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OBITUARIES

Thomas S. McIntire

Thomas S. McIntire, 60, president of F. N. McIntire Brass Works, Inc., Cambridge, Mass., manufacturers of Invincible nozzles and valves for the fire service, died October 24 of a heart attack. A graduate of Boston College in 1924, he

went directly to the New York Yankees as an infielder and later played in their farm system. He joined the brass company in 1927 and progressed to general manager, becoming president on March 1, 1952. He is survived by his widow and two daughters.

Chief Monte Lass

Chief Monte Lass, head of the Oswego, N. Y., Fire Department for over 38 years, died recently. A veteran of over 45 years service, he joined the department in January 1916 and was promoted to foreman in 1917. He was named assistant chief in 1922 and became chief on March 1, 1923. Active in state fire fighters affairs, he was a director of the New York State Association of Fire Chiefs for many years. He was also nationally known as a hunting dog handler and trainer and served as a judge at many national field trials.

Assistant Chief John D. Murray has been named provisional fire chief pending a civil service examination for the post.

Chief Edward B. McCabe

Chief Edward B. McCabe, 46, Milwaukee, Wis., Fire Department, died of a heart attack in Lanesboro, Minn., on October 4. He was returning by car from the recent Las Vegas conference of the International Association of Fire Chiefs when he was stricken.

Chief McCabe was appointed to the department on June 16, 1939, promoted to lieutenant in 1948, and made captain in 1951. He became a battalion chief in 1954, and was named chief on September 10, 1959. A member of the Great

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Lakes Division, International Association of Fire Chiefs, he appeared on the program of the recent 88th annual conference in Las Vegas as moderator of the workshop panel devoted to "Job Classification and Salaries."

Retired Chief Henry Chase

Henry R. Chase, 75, retired chief of the Miami, Fla., Fire Department and past president of the International Association of Fire Chiefs, died November 2 in Baptist Hospital, Miami, following an apparent heart attack.

Chief Chase came to Miami as a youngster in 1896 from Portland, Maine, to recuperate from tuberculosis. In 1904, at the age of 18, he became the city's first paid fireman and was named chief in 1909. In 1917, he resigned to manage a real estate development firm and in 1920 was elected to the City Council. In 1925, he was elected Dade County sheriff and served until 1929 in this office.

He returned to the fire department as chief in 1935 and served until his retirement in 1953. In 1940, the University of Florida conferred upon him the honorary degree of Bachelor of Science. He was an active life member of the Southeastern Division, IAFC.

Daniel G. Aid

Leighton Maxim

Leighton LeB. Maxim, 51, vice president of the Maxim Motor Company, Middleboro, Mass., passed away at his home in Middleboro on November 8, after a long illness.

He was the third generation of the Maxim family active in the fire apparatus company bearing the family name. His grandfather, the late C. W. Maxim, founded the company which was carried on by his father, the late Ernest L. Maxim, until it was acquired by the Seagrave Corporation in 1956.

Mr. Maxim graduated from the Middleboro High School and went into the business immediately, working through the

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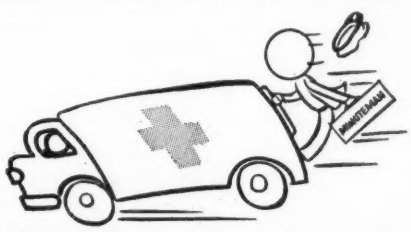
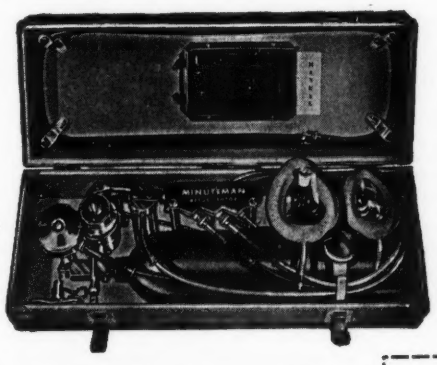


prevents emergencies from becoming tragedies



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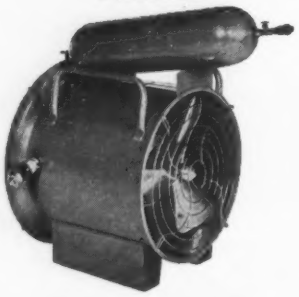

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shops, engineering, and finally into sales work which had been his major interest for many years. He was well known throughout the industry as a sales official and for his work in the manufacturers association.

Mrs. Lillian Brennan

Mrs. Lillian Brennan, widow of Charles J. Brennan, chief of the San Francisco, Calif., Fire Department from 1929 to 1943, died on October 16th.

She was a familiar sight at the many conferences of the International Association of Fire Chiefs she attended with her husband, who served as its president in 1936. □□

Names in the news

NBFU Promotions

The National Board of Fire Underwriters has announced the promotion of four executives and the realignment of certain responsibilities.

W. Victor Slevin has been named assistant general manager in charge of Pacific operations with offices in San Francisco.

John Davidson has been named assistant manager in charge of New York office management and administration. He previously was assistant secretary.

Frederick W. Westervelt, Jr., assistant secretary in New York, has been placed in charge of personnel and public relations activities.

Boyd A. Hartley has been named assistant secretary with responsibility for administration of the Chicago office. In addition, he will continue as head of engineering activities in Chicago and the Midwest.

Fireman Receives National Magazine Award

Fireman Vincent Merenghi of the Newark, N. J., Fire Department, has been named winner of the *True Detective* Public Service Award for November.

Departing from its usual practice of presenting the award to a police officer, the magazine cited Merenghi for his bravery in apprehending an armed fugitive last August 1. While helping to battle a four-alarm blaze, the 35-year-old pump operator saw a running man, gun in hand, heading directly towards him. Three policemen were in pursuit. As the gunman got close to Merenghi, he leveled his weapon and fired point blank at

NEW PRODUCT LITERATURE

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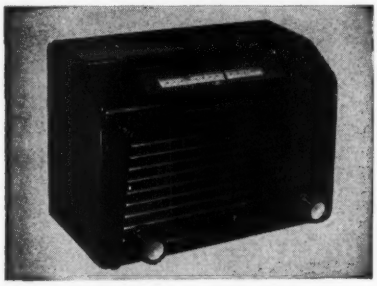

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the fire fighter. Miraculously, the shot missed.

Acting quickly, Merenghi launched a flying tackle at the fugitive, grabbing for his gun hand at the same time. Two more shots were fired while the men grappled, but the fireman kept a firm grip on his opponent's gun hand until police arrived and broke up the desperate struggle.

Commenting on his adventure, Merenghi said: "The police are always helping us firemen during a fire, so I saw this as a chance to help them for a change." Merenghi received an official commendation from James T. Owens, director of the Newark Fire Department.

Gratz Named Chief Of Silver Spring

David B. Gratz has been appointed chief of the Silver Spring, Md., Volunteer Fire Department. Edward A. Cooke, president of the department, stated that the position, which was formerly filled by a volunteer, was created on the recommendations of the Maryland Fire Underwriters Rating Bureau.

Chief Gratz has been a resident of Silver Spring since 1943, and is a graduate of American University where he received a master's degree in public administration last June. He joined the fire service with civil defense in 1946, and became a volunteer fireman in 1949.

He is a former president of the County Firemen's Association and is now serving as chairman of the Volunteer Committee of the International Association of Fire Chiefs. This year Governor Tawes appointed him to head the Governor's Fire Prevention Conference.

H. A. Coumbe Retires From National Board

Harold A. Coumbe, assistant general manager of the National Board of Fire Underwriters, retired October 31 after 34 years of service with the board. He joined NBFU in 1927 and was named assistant secretary in 1937. He became executive assistant to the general manager in 1943 and assistant general manager in 1951. □□

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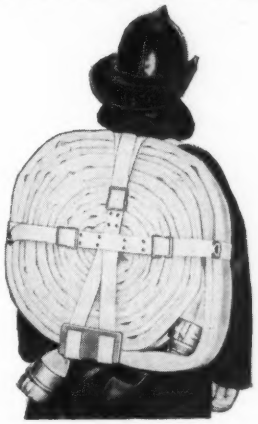

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SAN JOSE DEGREE PROGRAM

Continued from page 1087

Department, has taught the Fire Control Strategy class. Captain Charles Crabtree, training officer of the Sunnyside Public Safety Department, has made the course in Elements of Supervision particularly useful to firemen and is now enlarging the course in Report Writing and will teach it next year. Chief George Maxwell of the Campbell Fire Department taught a successful course in this subject last year. A very popular and well received course in Fire Prevention was developed and taught to 70 firemen last semester by County Fire Marshal Bruce Wiggins. He is now expanding the course into a two-semester sequence.

In addition, fire fighters will take approximately 20 units of general education and subjects required for graduation, leaving 12 to 20 units of electives needed to complete the 60 units required for the Associates in Arts degree.

The sequence of courses are as follows: Fire Hydraulics, Fire Control Strategy, Advanced Fire Hydraulics, Hazardous Materials, Physical Science for Firemen, Report Writing, Elements of Supervision, Fire Prevention I, Fire Prevention II, Codes and Ordinances, Fire Investigation, NBFU Grading Schedule, Fire Department Administration.

Present members of the Fire Training Advisory Committee for the San Jose Unified School District, who have been responsible for the strength and growth of the educational program, are: Chief Richard Bassett, Los Altos Fire Department; Joseph C. Bellenger, San Jose Unified School District; Chief L. J. George, Santa Clara Fire Department; Chief Jacob A. Jessup, Sunnyvale Public Safety Department; Chief Ron LeBeau, San Jose Fire Department; Roderick Clendenen, San Jose Unified School District; Chief Henry C. Linqua, Santa Clara County Fire Department; Donald Macrae, personnel director, City of San Jose; Chief George Maxwell, Campbell Fire Department; Chief Richard Wall, Los Gatos Fire Department; Bruce Wiggins, fire marshal, Santa Clara County. □□

FDNY Will Need 181 New Fire Stations

Acting Fire Commissioner George F. Mand recently told the New York City Planning Commission that 137 of the New York Fire Department's 275 fire stations were more than 50 years old. Speaking in behalf of Fire Commissioner Edward F. Cavanagh, Jr., who was on leave, Mand told the commission that within eight years, 44 more stations will attain that age. He stated that an adequate replacement program would require the construction of at least 22 new stations in each of the next eight years.

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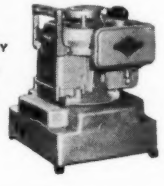

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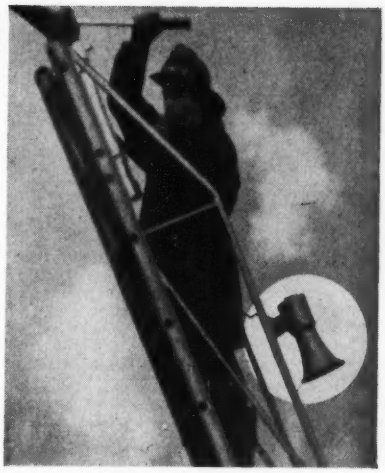
What's burning

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from October 1st to October 30th.

Anchorage, Alas.—Radio station KHAR, seven miles southeast on Seward Highway, destroyed.
Bell, Calif.—Birchcraft Furniture Manufacturing Co. damaged.
Folsom, Calif.—Folsom Prison warehouse housing furniture and 3,000,000 license plates extensively damaged.
San Francisco, Calif.—DePue Co. warehouse, Armor Galvanizing Works and two dwellings at 430 and 490 Iowa Street, destroyed. Arson by children.
San Francisco, Calif.—Apartment dwelling at 1070, 1076, 1080, 1090, 1102 Page Street, 210 and 222 Broderick Street, damaged.
San Francisco, Calif.—Three dwellings, warehouse, four trucks and three trailers in Potrero Hill district, destroyed.
San Francisco, Calif.—Tavern and wholesale shoe firm destroyed.
Abington, Conn.—Barn, silo and 11 head of cattle on Harold E. Cunningham farm, destroyed.
Ansonia, Conn.—Ansonia Lumber Co. damaged.
Cromwell, Conn.—St. Paul's Hall of the Holy Apostles Seminary, damaged.
Bridgeport, Conn.—Thom McAnn Shoe Store damaged.
Bristol, Conn.—Masonic Building housing Muzzy Bros. Co. Department Store damaged.
Eastford, Conn.—Buell Greenhouses damaged. Overheated electrical soil sterilizer.
Greenwich, Conn.—Shorefront home of Richard Maynard destroyed.
Rocky Hill, Conn.—Crown Petroleum Co. damaged.
Wilmington, Del.—W. T. Grant store in Midway Shopping Center, destroyed.
Dudley, Ga.—Main building of Dudley High School, destroyed.
Alton, Ill.—Colonial Baking Co. warehouse and three bread trucks, destroyed.
Chicago, Ill.—Helene Curtis, beauty aid plant in 16-building industrial complex; Zenith Corp. plant across the street; chemical-loaded tank car and several other buildings, damaged. Explosion.
East St. Louis, Ill.—Rothman Inc. discount store, damaged.
Springfield, Ill. — Kerst Hardware Store and warehouse destroyed; adjoining dwelling and other buildings, including Madison Furniture Store, damaged. Arson suspected.
New Albany, Ind.—Louisville Fireplace Corp. damaged.
Muscatine, Iowa—Downtown buildings housing Muscatine Pearl Works, Othmar Heating & Supply Co. and Bringer Radio & TV Service, destroyed.
Harlan, Ky.—Downtown apartment dwelling housing McCorkel's Star Furniture Co. store and adjoining building housing insurance agency, building and loan firm and Masonic lodge, damaged.
New Orleans, La.—Silver Dollar Hotel in French Quarter destroyed; Whitney National Bank branch damaged.
Portland, Maine—Three buildings of Maine Lumber Co. complex, warehouse and two loaded trucks owned by American Building Products Co., destroyed.
Indian Head, Md.—Experimental mixing laboratory at Indian Head Naval Propellent Plant damaged. Explosion.
Queen Anne, Md.—Two buildings of Eley Lumber Co. destroyed.
Cambridge, Mass.—Studios of Television Station WGBH destroyed.
Benton Harbor, Mich.—Truck service building of Hy Firehammer Tires, Inc., destroyed.
Breckenridge, Mich.—Arch Farm Market destroyed.
Marshall, Mich.—Onion warehouse owned by James E. Riley destroyed.
Petoskey, Mich.—A & P Supermarket destroyed;



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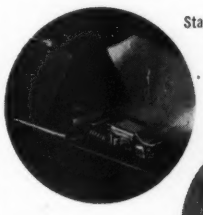

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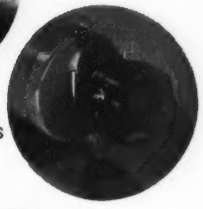

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1961 Willys FC-170 Special Heavy Duty four wheel drive Fire Truck. Equipped with: 500 gallon per minute Class A Mid-ship pump—200 Gal. booster tank, reel with 150 ft. of 1" hose and PDQ nozzle—20 Ft. Alum. Extension ladder—12 Ft. alum. roof ladder—two 10 Ft. lengths of 4" suction hose—strainer—hydrant connection—pike pole—axe—crowbar—hand lantern—beacon ray light—siren—two cab spotlights—pressure regulator—heat exchanger—two rear hose lights—two large compartments—body large enough to hold 1000 Ft. 2½" dacron hose and 400 Ft. of 1½" dacron hose. Truck is 6¾ Ft. wide—20 Ft. long and 7 Ft. high. This truck will go places and do things that no large two wheel drive Fire Truck can. Low Mileage. Our price F.O.B. Bay City, Michigan is $6900.00.

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Montgomery Ward & Co. damaged.

Springport, Mich.—Williams Steel Products Co. plant destroyed.

Clarksdale, Miss.—Building housing Keeler & Co., Barbiere & Steen Television Shop, Defenbaugh Finance Co., Delta Friendly Credit Store, Franklin's Barber Shop and Delta Buick Co., damaged.

Jefferson City, Mo.—Canning factory at Missouri Renz prison farm, destroyed.

Nashua, N. H.—Air-Formed Products Inc., division of Bemis Bag Corp., damaged.

Nashua, N. H.—Central Block housing City Bowling Alleys, Rosebud Candy Shoppe, Inc., Joe's Men and Boys Clothing Store, Richard's Barber Shop, Bernard Pastor's P.E., Fletcher Corp. annex, Roger's meat cutting school and Roger's Meat Market, damaged.

Clifton, N. J.—Rubber Latex Corp. of America destroyed.

Florence, N. J.—Two barns on Frederick Wainwright farm, Old York Road, destroyed; three other buildings damaged.

Jersey City, N. J.—Fish Net Restaurant destroyed.

Marlboro, N. J.—Barn and silo on R. D. Morgan dairy farm, Route 79, destroyed.

Newark, N. J.—Newark Standard Tallow Works damaged.

Paterson, N. J.—The Manhattan Shirt Co. plant damaged.

South Hackensack, N. J.—Storage buildings of Ten-Da Brand Frozen Foods Inc. destroyed. Faulty wiring.

Avon, N. Y.—Avon Elementary School damaged.

Binghamton, N. Y.—Busy Bee Variety Store in 24 Court Street building, destroyed; Barbara Moss women's wear shop at 22, Meyers Furs Inc. and Blindwork Assoc. Inc. at 20 and 19, damaged. Defective wiring.

Binghamton, N. Y.—Apartment dwellings of Herbert Rogers destroyed. Defective wiring.

Buffalo, N. Y.—Temple Beth-El, 70-year-old building, destroyed. Arson suspected.

New Hartford, N. Y.—Schuler Potato Chip Co. warehouse destroyed. Defective wiring.

Saratoga Springs, N. Y.—Thirty-stall barn housing 21 racing horses at Saratoga Raceway, destroyed.

Greensboro, N. C.—Garage and 31 autos at King Cotton Hotel, destroyed.

Greenville, N. C.—Reese Furniture Store destroyed.

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CAMBRIDGE 39, MASS.

Lumberton, N. C.—Lumber River Cotton Mills damaged.

Sanford, N. C.—Main plant of Roberts Co., textile machinery manufacturing firm, destroyed.

Tabor City, N. C.—Cox Furniture Factory destroyed.

Valdese, N. C.—Appliance store of Fred Pons and neighboring businesses, damaged.

Cleveland, Ohio — Radigan's Corners, three buildings housing John Spadafore garage, grocery and tavern of William T. Radigan, damaged.

Toledo, Ohio—Pure Oil Refinery, in suburban Oregon, damaged.

Upper Sandusky, Ohio—Building housing Upper Sandusky Airport Administrative Offices and Stoll Casket Co., destroyed.

McAlester, Okla. — O'Daniel Building, Bud Cole's barber shop, Busy Bee Cafe, Rainbow Cafe and Recreation Parlor, Cherokee Liquor Store, Mack's Drug Store, George Salhaney's pawnshop, Tom's barber shop, Frosco's Jewelry Shop and Williams Bargain Shop, damaged.

Central Point, Ore.—Grange Co-op Elevator destroyed.

Portland, Ore.—Ron Tonkins Chevrolet Agency destroyed.

Salem, Ore. — Schindler's Storage Barn destroyed. Faulty car wiring.

Butler, Pa.—Building housing Mowrey's Farm Equipment Co., damaged.

Homestead, Pa.—Coronet Cleaning Shop and other buildings in three-block area, damaged. Explosion.

Lebanon, Pa.—Barn on Warren L. Lentz farm, R. D. 1, destroyed.

Oxford, Pa.—Barn on Fred and Wiley Heck farm, 7 miles west, destroyed.

Pitcairn, Pa.—Air brake shop at Pennsylvania Railroad's Pitcairn yards, destroyed.

South Media, Pa.—Christ Christian Community Church destroyed.

Throop, Pa.—City Line Restaurant and adjacent meat processing plant destroyed. Gas explosion.

Uniontown, Pa.—Kinney Shoe Co. and adjoining Leonard Buildings, damaged.

Danielson, R. I.—Conneville's drug store, clothing store, card shop and apartment, damaged.

Batesburg, S. C.—Farris Furniture Co. and automatic self-service laundry in same building, damaged.

Columbia, S. C.—Columbia Pipe Co., operated by Richland Shell Products, North Columbia, destroyed.

Doversville, S. C.—Cotton gin on Highway 52, destroyed.

Gaffney, S. C.—Blanton Tractor Co., north in Cherokee Church community, destroyed.

Lexington, Tenn.—Building housing Cinderella Beauty Salon damaged.

Summerville, Tenn.—Morris Construction Co. office building-warehouse of Grady Morris, destroyed.

Houston, Tex.—Globe Discount City on Houston-Galveston Freeway, damaged.

Bennington, Vt.—Buildings housing Paradise Restaurant, Evans News Co., Andey's Barber Shop, law office of F. Ray Paddock, Fashion Fair, Bennington Book Shop, Jennie Yett Fruitland, Dragon's Shoe Store and apartments, destroyed or damaged.

Benson, Vt.—Federal Aeronautics Administration radio beacon, one mile south, destroyed.

Auburn, Wash.—Lincoln Apartments and two business firms, damaged.

Spokane, Wash.—Phillips Petroleum Co.'s district office destroyed.

Wenatchee, Wash.—Welch Apples Inc. packing plant destroyed.

Winslow, Wash.—Banbridge Island Airport housing four private planes, destroyed. Arson reported.

La Crosse, Wis.—Linker Office Building severely damaged.

Milwaukee, Wis.—Milwaukee Lead Works damaged.

Milwaukee, Wis.—Universal Optical Laboratory, grinding equipment and thousands of pairs of glass frames, heavily damaged.

New Richmond, Wis.—Central Lumber Co. warehouse destroyed.

Montreal, Que.—Three apartment dwellings under construction at 581 81st Avenue, Chomedey, damaged.

Villeneuve, Que.—Three-story apartment dwelling, destroyed; adjoining dwellings, damaged. Oil furnace explosion. □□

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Letter to the editor

Wetting Agents

To the Editor:

In the Round Table in the October issue you have reported on experiences on the use of wetting agents in the field. I noticed that several fire departments are using a combination type of proportioner for foam stabilizers and their wetting agent. As you know, this is a very dangerous practice. Most wetting agents are powerful defoaming agents and are very difficult to remove from piping systems. It takes only minute traces of wetting agent to contaminate a foam system to a point where little or no foam can be generated.

I think a subsequent column should point this fact out and carry a warning that all fire departments using a dual type of system take extreme precaution to insure that their wetting agents and foam stabilizers are fully compatible with each other. If these materials are used indiscriminately, a fire department is going to find themselves without foam capability at a time of need.

H. B. Peterson
Engineering Research Branch
U. S. Naval Research Laboratory
Washington, D. C.

Fire colleges

Fire Department Instructors Conference—February 27-March 2. Will be held in Memphis, Tenn. Conference Secretary, Harry H. Wolff, P. O. Box 1089, Chicago 90, Ill.

Indiana Fire Training Program—Jan. 15-19: **Fire Instructors Course;** Feb. 6-8: **Fire Administrators Course;** Apr. 3-5: **Industrial Fire Control Conference;** Apr. 23-27: **Arson Investigators Seminar;** May 14-18: **Basic Fire School;** June 5-7: **Rescue Training Course;** Sept. 18-21: **Indiana State Fire School;** Oct. 29-Nov. 2: **Fire Inspectors Course.** For information, write Professor Shelby Gallien, Director, Public Safety Institute, Division of Adult Education, Purdue University, Lafayette, Ind.

Morris County Fire School—Dec. 5—Panel Discussion, Denville Fire Department. For information, write Robert H. Wright, Publicity Chairman, Long Hill Lane, Chatham, N. J.

South Carolina Fire Fighter Training Service. Regional schools to be held as follows: Dec. 11-15, Metropolitan Sub. District B. For information, write H. B. Wells Instructor, Route 1, Box 119, Prosperity, S. C. □□

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The Journal of the Fire Protection Profession Since 1877

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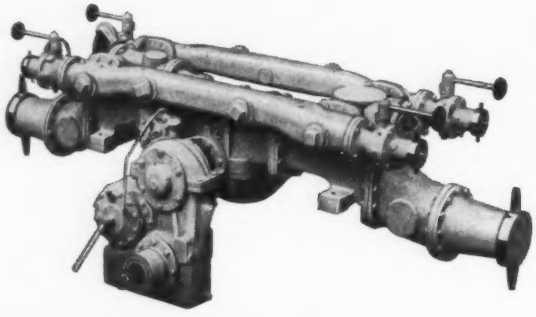

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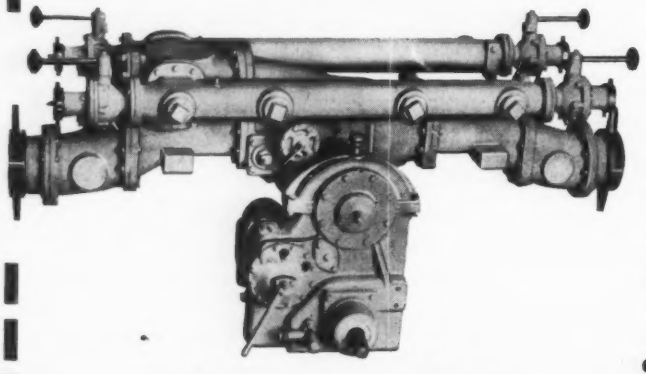

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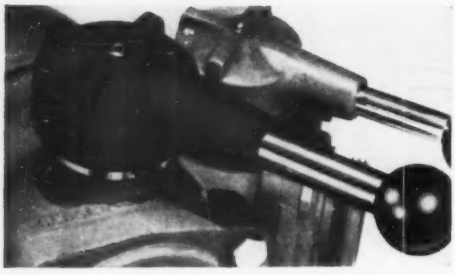

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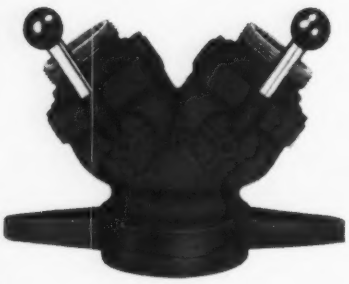

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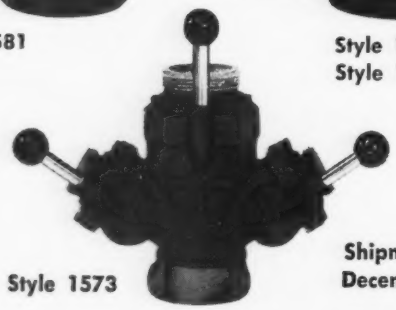

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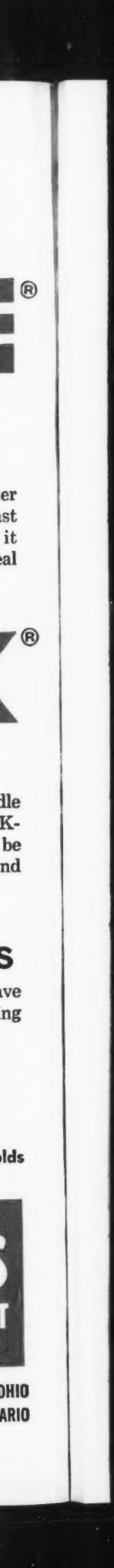
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